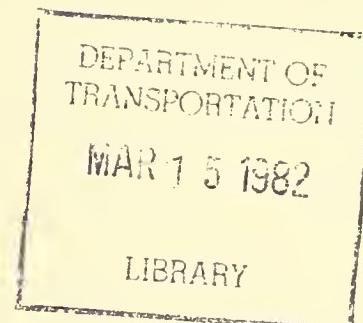


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UMTA/TSC Project Evaluation Series



Sacramento Transit Fare Prepayment Demonstration

Final Report
July 1981

Service and Methods Demonstration Program



U.S. DEPARTMENT OF TRANSPORTATION
Urban Mass Transportation Administration and
Research and Special Programs Administration
Transportation Systems Center

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16. Abstract This report presents an evaluation of the Sacramento Transit Fare Prepayment Demonstration. The demonstration, whose primary innovation was the sale of monthly transit passes through employers, was implemented by the Sacramento Regional Transit District (RT) under a grant from the UMTA Service and Methods Demonstration Program. The organizational phase of the demonstration began in October 1977, the solicitation of employers in March 1978, and the two-year distribution phase in June 1978. During the distribution phase, participating employers served as workplace outlets for the purchase of monthly transit passes by employees. The demonstration ended in June 1980. The Transit district's promotion of employer-based sale of passes, which was marketed as the 'Monthly PASSpoRT' program, emphasized the convenience to employees of pass purchase through their employers; it also urged employers to establish a payroll-deduction plan for pass purchase and suggested that employers subsidize the purchase of passes by employees as a means of reducing employer costs for employee parking. The demonstration yielded many useful lessons in marketing to employers and employees, and its three-month 25% discount on monthly passes provided an opportunity to observe the sensitivity of employee demand to the price of the monthly pass. Sixty-six employers participated in the demonstration, most of which sold passes over the counter with no subsidy. Most participating employers were attracted into the program because of the perceived employee benefit and not for a direct economic benefit. Due to the existence of numerous public outlets for pass purchase, the employer pass program appears to have increased the convenience of pass purchase to only a small degree in Sacramento. Nonetheless, with over fifty employers remaining in the pass program after the demonstration, the program has successfully established a long term working relationship between RT and Sacramento employers.		13. Type of Report and Period Covered Final Report October 1977 - June 1980
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PREFACE

The purpose of this report is to present an objective, structured evaluation of the Sacramento Transit Fare Prepayment Demonstration. The demonstration, whose primary innovation involved the sale of monthly transit passes through employers, was funded by the Urban Mass Transportation Administration (UMTA) Service and Methods Demonstration Program and implemented by the Sacramento Regional Transit District. This evaluation report, which covers the period from initiation of the demonstration in October 1977 through the end of the demonstration in June 1980, has been prepared by SYSTAN, Inc. for the Transportation Systems Center (TSC) of the Department of Transportation.

Mr. Stewart McKeown was the UMTA project manager and Mr. Michael Couture the TSC evaluation manager for the demonstration. The actual implementation of the demonstration was directed by Ms. Beth F. Beach, the project manager appointed by the Sacramento Regional Transit District. First Michael Holoszyc, and later Douglas Daetz, served as principal participants in the evaluation of the demonstration done by SYSTAN, Inc.

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Approximate Conversions from Metric Measures

Approximate Conversions from Metric Measures					
Symbol	Who You Know	Multiply by	To Find	Symbol	
mm	millimeters	0.04	inches	in	
cm	centimeters	0.4	inches	in	
m	meters	3.3	feet	'	
m	meters	1.1	yards	'	
km	kilometers	0.6	miles	m	
<u>LENGTH</u>					
cm ²	square centimeters	0.16	square inches	in ²	
m ²	square meters	1.2	square yards	yd ²	
km ²	square kilometers	0.4	square miles	mi ²	
	hectares (10,000 m ²)	2.5	acres	ac	
<u>AREA</u>					
g	grams	0.035	ounces	oz	
kg	kilograms	2.2	pounds	lb	
t	tonnes (1000 kg)	1.1	short tons	sh tn	
<u>MASS (weight)</u>					
ml	milliliters	0.03	fluid ounces	fl oz	
liters	liters	2.1	prints	pt	
liters	liters	1.06	quarts	qt	
liters	cubic meters	0.26	gallons	gal	
	cubic meters	.35	cubic feet	ft ³	
	cubic meters	1.3	cubic yards	yd ³	
<u>VOLUME</u>					
°F	Celsius temperature	9.5 (then add 32)	Fahrenheit temperature	°F	
°C	Celsius temperature		Fahrenheit temperature	°C	
<u>TEMPERATURE (exact)</u>					

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1. EXECUTIVE SUMMARY

1.1 THE NATURE OF THE DEMONSTRATION

The Sacramento Regional Transit District (SRTD, or simply RT) was chosen on the basis of its grant application to conduct an Urban Mass Transportation Administration (UMTA) demonstration aimed at enlisting employers to sell monthly bus passes directly to their employees. This demonstration project, called the Sacramento Transit Fare Prepayment (TFP) Demonstration, began officially in October 1977 with the hiring of a project manager; it ended in June 1980. Exhibit 1.1 presents a chronology of events pertinent to the demonstration.

Contacts were made inviting employers throughout the Sacramento metropolitan area to participate in the demonstration, which SRTD marketed as the "Monthly PASSport" program. The first participating employer began selling passes in May 1978 and, from November 1978 until the end of the demonstration, 50 to 55 employers were involved during any given month. Altogether, 66 employers participated during some portion of the demonstration program. Although the demonstration terminated in June 1980 with the sale of monthly passes for June, the employer pass program has been continued by SRTD as one of SRTD's own programs.

Prior to the TFP demonstration, and since its formation in 1973, SRTD had been selling monthly passes valid for unlimited bus travel during the month for which the pass was issued. A monthly pass was originally priced the same as 40 individual bus trips (\$10). In August 1976, the fare for a single ride increased to 35 cents, resulting in the monthly pass (\$12) having effectively a 14% discount for the daily commuter. Pass sales increased markedly, from approximately 1,000 per month before August 1976 to 3,000 per month shortly after; by early 1978, over 4,000 passes were being sold each month. At the time the TFP demonstration began selling passes through employers (May 1978), approximately 20% of all SRTD riders were using monthly passes that they could purchase at any one of 35 sales outlets in the Sacramento metropolitan area. During the course of the demonstration the number of public pass sales outlets continued to increase, and a fare increase on September 1, 1979, effectively discounted the monthly pass (\$16) twenty percent

Exhibit 1.1

CHRONOLOGY OF EVENTS FOR THE SACRAMENTO TRANSIT FARE PREPAYMENT DEMONSTRATION

DATE	DEMONSTRATION EVENTS	EXOGENOUS EVENTS	MEASUREMENTS
Late October, 1977	Hiring of Demonstration Project Manager		
March, 1978	Initiation of solicitation of employers to participate in demonstration		
April-September, 1978			First Employee Survey (given to all employees, except for random sample in case of two largest employers)
May, 1978	Initiation of pass sales by first employer		
June, 1978	Initiation of pass sales by first group of 8 participating employers (sale of July passes). Distribution of announcements describing demonstration directly to bus riders		
October-December, 1978	Sale of passes with 25% discount. Total number of employers participating rose to 34 in October and 52 in November and December	SRTD kiosk in CBD closed between October 27 and December 8 inclusive (due to problem of safety of kiosk employees)	
Late November-Early December, 1978			Second Employee Survey (given only to buyers of December passes)
February 22, 1979		Closing of 3rd largest CBD pass sales outlet (Weinstock's)	
March 16, 1979		RT kiosk closed permanently; new RT "Passenger Service Center" one block from kiosk opened in Savings & Loan building	
May, 1979		SRTD strike	
Late August-October, 1979			Third Employee Survey (postponed from April due to strike; same distribution strategy as First Employee Survey)
September 1, 1979		SRTD fare increase	
June 1980	End of Demonstration		End of data considered in the Evaluation

below the price of 40 single fares. This provides a brief historical backdrop to the Sacramento Transit Fare Prepayment Demonstration.

1.2 THE IMPLEMENTATION PROCESS

1.2.1 Employer Reactions to the Invitation to Sell Passes

When RT initially approached employers asking them to sell passes to their employees, RT emphasized the convenience the employer would be offering to employees by selling passes and the possible savings to the employer from reduced costs for employee parking. Few of the 140 employers contacted expressed interest. Only nine firms were selling passes by July 1978, the planned start-up date, substantially fewer than the goal of 30 employers. Over 100 firms had refused to join the program, most saying that few of their employees rode the bus so that it would not be worthwhile to sell passes. Besides, they said, passes were already available at many conveniently located public outlets.

RT subsequently developed two strategies that ultimately proved successful in inducing employers to sell passes. First, RT directed its promotional activities toward employees rather than company managers, hypothesizing that managers would be more responsive to employee pressure to join the program than RT's solicitations. Thus, RT distributed literature on buses and began advertising on buses, bus benches, and in newspapers. Second, RT announced a three-month discount period in which passes sold by employers would cost only \$9 rather than the usual \$12; the discount provided an incentive for employers to join the program, since they would be offering their employees a tangible benefit.

These new strategies, aided by both a local and a national "bandwagon" effect regarding employer participation in transit pass programs, induced over 40 employers to join the program during September, October, and November of 1978. However, there was one negative side effect: the discount aroused resentment among many regular transit riders who were not eligible to purchase discounted passes because they were not employed at a firm participating in the demonstration. For about six weeks after the announcement of the discount, RT received a steady stream of complaints about the discount's selectivity.

1.2.2 Involvement of the Public and Private Sectors

Government agencies joined the demonstration program in much greater numbers than private concerns, reflecting the former's dominant representation among the larger employers in Sacramento and relatively greater concentration in the central business district where transit service was good and spaces for employee parking were limited.¹ Over half of the participating employers were public agencies, and because they were larger than the private-sector firms that participated, over 80% of all eligible employees were employed in the public sector.

1.2.3 Transit and Parking Subsidies Offered by Employers

Though it generally would be more economical--and environmentally beneficial--for a Sacramento employer to buy each employee a monthly transit pass than to provide each employee a parking space, few employers appreciated this fact sufficiently to decide to subsidize the purchase of transit passes by employees.

Of the 66 firms that participated in the "Monthly PASS-PORT" program, seven subsidized employee purchase of transit passes during at least some part of the demonstration. Three of these pass-subsidizing employers were small CBD firms that did not provide parking for their general employee. Fully (100%) subsidized passes were offered to employees by one small non-profit association, two community service organizations, and a hospital; one private engineering firm provided a 50% subsidy; a public utility gave a \$6 subsidy (which represented a 50% subsidy until the cost of a monthly pass rose to \$16 on September 1, 1979); and a private fruit-packing concern provided 42% and 17% subsidies during the first and second months, respectively, of its participation.² Only the public utility subsidized the purchase of monthly passes throughout the entire distribution phase of the demonstration; this non-CBD employer accounted

¹ A more active civic commitment to saving energy and reducing air pollution through the use of high-occupancy transportation may also have been a factor in the better response of public-sector organizations to the employer pass program than that of private firms.

² In June 1980, the last month of the demonstration, subsidized passes represented 9.0% (172 of 1920) of employer-sold passes; fully-subsidized passes (i.e., passes given free to employees), however, comprised but 2.4% (46 of 1920) of the June passes sold by employers.

for over two-thirds of all employer-subsidized passes sold.

On the other hand, often without realizing to what extent, most employers subsidized their automobile-using employees with regard to parking. The overwhelming majority of firms provided or arranged for employee parking, although in most cases there were not enough spaces for all employees. Still, employees at almost every firm paid considerably less than the market rate for parking. Outside the central business district (CBD), most employers provided free parking. Within the CBD, employee parking costs ranged from zero to \$22 per month, whereas city-owned and private parking lots in the CBD charged between \$20 and \$52.50 per month. State employees, who comprised most of the CBD employees in the demonstration program, generally paid only \$10.50 per month for parking in State-operated facilities.

1.2.4 Pass Sales Procedures

Initial demonstration planning envisioned a sizable percentage of participating employers selling passes by payroll deduction, but in practice only about one-seventh of the employers offered employees the payroll deduction option for pass purchase. The vast majority of firms sold passes over the counter. Generally, payroll deduction seems to have been viewed by both employers and employees as a burdensome technique. At employers who did offer payroll deduction, pass sales per employee were only 15% to 20% of those occurring at firms selling passes over the counter. This result suggests that either the implied long-term commitment or the perceived complication of using payroll deduction discouraged employees from purchasing passes through their employer.

1.2.5 The Attitudes of Participating Employers

Participating employers generally felt the program was modestly beneficial, citing improved convenience for their transit-riding employees and, in a few cases, increased transit usage. Employers reported that it cost them about 50 cents for every monthly pass sold (mostly for clerical time spent administering the program), of which 10 cents was associated with the costs of handling the surveys of employees required for the evaluation of the demonstration. These costs were almost universally perceived by employers to be negligible.

Most of the firms that did drop out of the program did so either because a public outlet was very close (generally

within one block) or because zero or few passes were being sold each month; under these circumstances the benefits of participation were considered insufficient to justify even the small administrative costs involved.

1.3 MONTHLY PASS USE PRIOR TO THE DEMONSTRATION

In order to determine the extent of preexisting monthly pass use, employees of the first thirty-three firms to join the Monthly PASSpoRT program were surveyed before their respective employers started selling monthly passes. The responses to this "First Employee Survey" indicated that only about one-third of the 22.5% of employees who rode the bus used the monthly pass to pay the fare.

The major reason given for not using the pass was that the employee did not ride often enough each month. Bus-riding employees used transit just under four days a week on the average, but almost as many persons reported commuting by bus from one to four days each week as those who reported using the bus five days each week; the monthly pass was not economically advantageous for the former group. Nine percent did not use passes because they were inconvenient to purchase; three percent did not know about the monthly pass nor where to buy it. Although the demonstration did reduce the number who cited the pass as being inconvenient (to 3%), this could have had only a minor effect on total pass sales.

In addition to the frequency of bus commuting, three other factors were strongly correlated with pass usage: use of transit for non-work trips, sex, and income level. People who made some non-work bus trips were more likely to be pass users than those who did not make non-work bus trips. Female transit users as a group were more than one-and-a-half times as likely to be pass users as male transit users. With regard to the household income of transit-riding employees, use of the monthly pass was greatest at the lowest income levels (<\$10,000) and declined with increasing income. Since women comprised the vast majority (over 80%) of the transit-using employees reporting household income less than \$10,000 (and between \$10,000 and \$14,999), the group of lower-income women showed the greatest incidence of pass use (apparently due in considerable measure to their having relatively less access to a private vehicle for commuting).

For most buyers, the fact that the pass was transferable did not appear to be a significant factor in the decision to buy a pass. Only 9% of pass purchasers said that others used their passes, and it was usually only for one or two trips per week.

1.4 EMPLOYEE RESPONSE TO THE DEMONSTRATION

1.4.1 Pass Sales

During the three-month 25% discount on employer-sold passes, pass sales nearly tripled at the nine employers which had been selling passes for at least three months prior to the October-December discount period. Many of the pass purchasers previously bought passes at public outlets, but according to a survey of discounted-pass purchasers (Second Employee Survey), the number of employees of participating firms purchasing passes at any location rose by 89%. A later employee survey (Third Employee Survey) showed that the number of first-time pass purchasers during the discount period was triple that which would normally occur. The increased pass purchasing by employees, which seems primarily to have been associated with increased frequency of transit use rather than with a change in employee preference for use of the monthly pass per se, caused total RT monthly pass sales to increase during the final month of the discount to 23% above the level of sales expected on the basis of past trends.

Following the discount period, employer pass sales immediately dropped by more than 50% from the November and December levels. Total RT pass sales during the first three months after the discount period averaged 4% higher than projected levels, but the percentage increase in actual sales over the sales expected on the basis of past trends declined steadily from 8.3% in January to 2.8% in February to only 0.6% in March 1979. Thus, the effect of the discount in raising total RT pass sales seems to have almost disappeared three months after the end of the discount.

The monthly dropout rate on pass purchases among employees buying passes for the first time during the discount period appears to be about 10% per month. This rate of attrition in pass purchase is approximately double the 4% to 6% per month rate at which employees who bought passes before May 1978 stopped buying passes. It also is higher than the approximately 8% per month dropout rate in pass purchase among employees who started using passes in the May-September 1978 (pre-discount) period.

1.4.2 Transit Ridership

The survey of the employees buying discounted monthly passes (Second Employee Survey) suggests that approximately 15% of them were new transit users. However, about one-third of these new users could have been expected to buy passes even if there had been no discount due to the normal

processes of change (turnover) in the work force and in the commute modes chosen by individual workers. Consequently, about 10% of the employees buying discounted passes may be considered new transit users attracted by the employer sale of discounted passes. Since the new users made slightly fewer trips per week than employees who had previously been using transit, the real increase in transit ridership (trips) among eligible employees during the discount period has been estimated to be 9.5%. This increase was composed of a 7.5% increase attributed to the new users and a 2% increase resulting from former cash-paying customers using transit more often. The increased ridership by these employees resulted in a systemwide ridership increase of about 1.6%.

Eight months after the discount, approximately 60% of the new riders attracted by the discount were still commuting by transit. The great majority of former cash payers who bought passes during the discount period reverted to their previous frequency of transit usage afterwards, so the overall residual ridership impact eight months after the discount was a 4.5% increase in transit ridership (60% of 7.5%) among eligible employees. This represented a systemwide ridership increase of about 0.7%.

The three employee surveys in Sacramento have shown that there is a high turnover rate for transit users. Among employees working at the same location over the course of about one year, 30% of the transit user population was replaced. This represents an attrition rate of almost 3% per month for these employees who were using transit before the employer pass program began. In contrast, the new riders attracted by the discount quit using transit at about double that rate, or 6% per month.

1.4.3 Fare Prepayment and Commitment to Transit Use

The available data show that monthly pass users were as likely to drop out from transit use as persons paying the fare daily, and the overall amount of bus usage by the two groups also changed similarly. Using a monthly pass does not appear to increase the likelihood of continuing to use transit in the long term (beyond one month).

1.5 ECONOMIC IMPACTS

1.5.1 Transit Revenue Impacts

The three-month 25% discount on monthly passes resulted in an estimated 11.4% decline in transit revenues from employees of participating organizations. The estimated dollar loss in revenue over the three months of the discount is just under \$12,000. However, including the effect of the transit strike in May 1979, this revenue loss was probably made up in about seven months by new users attracted by the discount, and an estimated \$18,500 in additional revenues for these new riders could have been expected in the year following. The discount thus appears to have been economically beneficial in the long run.

1.5.2 Pass Program Costs

The average monthly cost to RT of administering both the public and employer pass outlets in Sacramento (excluding extraordinary demonstration expenses) was calculated to be \$1,147 during the final year of the demonstration. With an average of 7,017 passes and 3,428 stickers sold each month, the administrative cost per fare prepayment instrument sold was 11.0 cents. On the basis of 46 bus trips (work plus non-work) per month, which was the average frequency of transit use among employee pass users, this amounts to an administrative cost per trip of about 0.25 cents (equal to 0.5% of the 50-cent fare that existed at the time the administrative costs were calculated). Although it is not known to what extent employer outlets, in and of themselves, attracted new employee riders (i.e., the attraction of convenience factors alone as opposed to the combined attraction of a discount and convenience factors), the cost of administering the employer pass program was small and was perceived by RT to be a worthwhile investment.

1.6 MAJOR FINDINGS AND CONCLUSIONS

Demonstration Impact on Employer Participation

- A promotional approach aimed at making transit-riding employees aware of RT's employer pass program, coupled with the announcement of a 25% discount during October-December 1978 on passes bought through employers, proved to be more successful in winning employer participation in the pass program than the direct solicitation of employers that RT had tried initially.

- Despite a marked drop in pass sales through employers after the discount period, the great majority of employers felt the "Monthly PASSpoRT" program had positive value and remained in the program.
- Although the use of a payroll-deduction plan for pass purchase had been suggested by RT both to employers and employees, fewer than 15% of the participating employers offered the payroll-deduction option to their employees. In firms where pass purchase was possible only through payroll deduction, the percentage of employees purchasing passes at work was much lower than that in firms selling passes over the counter or by subscription.
- Seven employers (11%) took up the idea promoted by RT of subsidizing the purchase of monthly passes by employees.

Demonstration Impact on Accessibility (Supply) of TFP Instruments

- The sale of transit passes through employers appears to have increased the accessibility (convenience of purchase) of monthly passes to only a relatively small extent for employees of organizations participating in the demonstration because, from the perspective of the employees of any single firm, the employer pass program added just one pass outlet to the 35+ public outlets sprinkled throughout RT's service area.

Demonstration Impact on Travel Behavior and Demand for Monthly Passes

- The 25% discount on employer-sold passes for October, November, and December 1978 caused employer pass sales to increase sharply and total pass sales to rise an estimated 10.1%, 21.0%, and 23.0% above the levels projected for each of those months, respectively. After the discount, sales of passes through employers dropped immediately to less than half their November and December levels, although total pass sales through all outlets remained 8.3% above projected values in January 1979. However, by February and March the gains in total passes sold had diminished to 2.8% and 0.6%, both insignificantly above projections based on pre-discount trends.
- Approximately 60% of the passes sold through employers during the discount were due simply to change in location of purchase--from a public outlet to one's employ-

er--in order to obtain the discount. Another 30% of the employer-sold passes were bought by transit users who previously paid cash each day, and an estimated 10% of the purchasers of discounted passes were truly new riders attracted by the discount.

- The new riders attracted to transit by the discounted monthly pass appear to stop using transit at about double the rate of transit users in general. However, approximately sixty percent of these new transit users continued to use the bus eight months after the discount period.
 - According to the employee surveys of April-September 1978 and August-October 1979, over the course of the demonstration the percentage of transit-using employees who normally used the monthly pass increased slightly from 31.9% to 35.3%. However, use of the monthly pass relative to the use of cash as the fare payment method did not change significantly during the demonstration until after the fare increase in September 1979 lowered the break-even point for the monthly pass from 34.3 trips/month to 32.0 trips/month.
 - Comparison of the pre-implementation (first) survey of employees with the post-discount, mid-demonstration (third) survey shows no significant increase in the proportion of employees (23%) using transit at least one day per week for commuting. With regard to non-work trips, the percentage of respondents indicating that they made no non-work trips on transit rose 2% (from 89% to 91%) between the first and third surveys.
 - The extensive marketing efforts made to publicize the monthly pass to employees of firms participating in the employer pass program do not appear to have decreased the initially-low fraction of people (3%) who reported not knowing about the monthly pass nor where to buy it.
 - Due to RT's public promotional campaign concerning the three-month discount period, RT received considerable criticism for offering the 25% discount only on passes bought through employers participating in the "Monthly PASSport" program. Those ineligible for the discount complained of unfair treatment.³
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³ This reaction, which cost RT some loss of esteem, points out that transit demonstrations should try to avoid inequity of treatment of different groups; if a temporary inequity is unavoidable in order to evaluate an innovation, any public announcements concerning the inequity should explain the goals and extent of the test program.

Demonstration Impact on the Transit Operator

- The employer pass program appears to have increased transit ridership about 1.6% during the three-month discount period. Eight months after the discount the increase in transit ridership attributable to the employer pass program was estimated to be approximately 0.7%.
- The new transit users attracted by the 25% discount who continued using transit after the discount appear to have generated sufficient revenue in the seven months following the discount period (this includes the effect of the transit strike in May 1979) to make up the approximately \$12,000 of lost revenues during the discount period. Since an estimated 60% of the new riders attracted by the discount were still using transit for commuting in August 1979, up to \$18,500 in additional revenues might have been generated by this group of transit riders in the year beginning August 1979.
- The employer pass program had a positive but small effect--between \$40 and \$90 per month--in terms of the value of the improvement in cash flow to RT.
- The increased ridership due to the employer-based pass program was too small to have had more than a marginal and immeasurable effect on the productivity of transit vehicles. Since bus service in Sacramento appears to be supply-limited on some lines at peak commuting times, new employee riders may actually have discouraged some existing or potential riders from using RT.
- The ongoing administrative cost to RT for carrying on the employer pass program was determined to be \$1,111 per month during the first year of employer pass sales. Consolidation of all of RT's pass sales activities under one administrative regime during the second year resulted in average monthly costs for all sales of passes (including passes sold through public outlets) of \$1,147, of which approximately \$480 may be attributed to the employer pass program. Even at this lower figure, however, the evidence on pass sales suggests that, in the absence of a discount on passes bought from employers, the number of new riders purchasing passes each month solely on account of the employer pass program might be insufficient to recover the costs of administering the program.

General Conclusions and Implications for Transferability

In the Sacramento demonstration, the sale of monthly transit passes through employers appears to have had a very small long-term positive impact on the number of employees using passes and on transit ridership. The small impact is attributed mainly to the fact that a large share of the market for monthly passes had already been penetrated prior to the demonstration as a result of the existence in Sacramento of:

- A relatively mature transit system that had been offering transit fare prepayment instruments--including the monthly pass--for five years prior to the demonstration;
- A relatively large number (35+) of public pass sales outlets scattered throughout the transit system's service area; and
- A relatively high level of transit use by Sacramento commuters prior to the demonstration.

However, RT perceived another important "spin-off" benefit of the employer pass program, namely, heightened community awareness of transit and greatly increased employer involvement with RT. Toward the end of the demonstration a fruit of the heightened community awareness and employer involvement was the decision by the County of Sacramento's Welfare Department to purchase in excess of 2,300 passes each month for distribution to recipients of general assistance aid. The Welfare Department became RT's largest (by far) single buyer of monthly passes. Its bulk purchase each month was fifty percent greater than the total volume of passes sold through all the employers (more than fifty) in the "Monthly PASSport" program, and therefore served to greatly reduce the overall cost per pass sold of administering the pass program.

The impact of the demonstration on pass sales and transit ridership would probably have been greater if more employers had offered employees a continuing economic incentive for pass purchase. Only one employer offered passes at a discount to its employees throughout the entire distribution phase of the demonstration. Although RT did mention in its promotional materials some of the ways that employers might benefit from helping their employees buy monthly bus passes, detailed information concerning the costs and benefits to employers of offering their employees subsidized monthly transit passes was not given. Exposure to detailed cost-benefit information might have encouraged more employers to subsidize employee purchase of bus passes. For example, presentation of a detailed analysis showing the high

cost of providing parking for employees might have provided an informational input to employers that would have led more of them to provide subsidized bus passes for their employees as a way to limit or reduce their implicit or explicit costs related to employee parking.

The clearest single indication that the convenience of employer-based pass sales played a smaller role than economic incentives is the fact that pass sales by employers, even after fifteen months, had not returned to the levels achieved in November and December 1978 during the \$3 discount on monthly passes bought through participating employers. In December 1979 total pass sales were 6% higher while employer pass sales were 54% lower than in December 1978. By February 1980 total pass sales were 39% higher than in December 1978, but employer-sold passes were still 45% lower than in December 1978. Even by the end of the demonstration in June 1980, employee purchases of passes through their employers were 31% lower than in December 1978, although total pass sales (excluding the bulk purchase of 2,856 passes by the Sacramento County Welfare Department), were 34% above the level of December 1978.

Some characteristics of the demonstration setting and of the demonstration's focus may tend to limit the transferability of the findings and conclusions contained in this report. Sacramento is the capital of the State of California. It lies in a broad, flat valley, and enjoys a mild winter and a hot, dry summer, so there are no major logistic or climatic obstacles to physical movement (except some heavy fog in winter and the heat of summer). The Sacramento area has twice as many government workers and one-third the number of manufacturing employees, per thousand persons employed, as the national average. The 18% bus mode share of Sacramento commuters at the start of the demonstration was twice the national average.

Exposure to transit fare prepayment was high among employees in the study area well before the demonstration began. With about half of transit-using employees utilizing some form of transit fare prepayment and close to one-third using a monthly pass, transit fare prepayment--and specifically the monthly pass--was neither novel nor inconvenient to obtain at the time the demonstration began. Thus, excluding the special case of the bulk pass purchase by the Welfare Department of the County of Sacramento, the relatively undramatic increase in pass sales effected by the introduction of the employer pass program in Sacramento will not necessarily extrapolate to other settings. Areas less familiar with or with less pre-existing access to monthly transit passes or other prepayment instruments would be expected to exhibit more dramatic responses to the introduction of an employer-based pass program--or a public-outlet pass program--than Sacramento employees did.

On the other hand, the findings and conclusions relative to the Sacramento demonstration are generally consonant with the results reported for the UMTA-sponsored TFP demonstrations in Austin, Texas and Phoenix, Arizona.⁴

Although the small number of employers offering passes to their employees at a discount left basically unexamined the ability of discounted passes to draw commuters to transit over the long-term, the response of Sacramento employees to the three-month 25% discount on monthly passes and to the increased relative advantage of the monthly pass after the September 1979 fare increase demonstrates that they react swiftly and strongly to economic incentives.

A final comment on the transferability of the Sacramento TFP Demonstration results relates precisely to the almost dizzying increase in the number and variety of transit fare prepayment programs involving employers and their employees. With the cost and effort of automobile commuting increasing for employees, the cost of providing parking places increasing for employers, and the cost of running transit systems increasing for their operators, the partnership of employees, employers, and transit system operators is an idea whose time has come (again). Therefore, the most significant transferable result of the Sacramento demonstration may already have been made: namely, its example as an early working model of an employer-based pass program may have accelerated the gestation, growth, and development of a new idea.

⁴ See Pamela Bloomfield and John Crain, Transit Fare Prepayment Demonstrations in Austin, TX and Phoenix, AZ, Crain & Associates, Menlo Park, California, June 1979 (Report No. UMTA-MA-06-0049-80-1), pages 1-6 and 131-136.

2. INTRODUCTION

2.1 PURPOSE OF THE DEMONSTRATION

The Sacramento Transit Fare Prepayment Demonstration focused on the sale and distribution of monthly transit passes through employers. Prior to the demonstration, the Sacramento Regional Transit District (RT) sold monthly transit passes to the general public at 35 outlets. During the demonstration, RT invited employers throughout the metropolitan area to sell passes to their employees. Sixty-six employers participated over the course of the demonstration in the employer pass program, which RT dubbed the "Monthly PASSport" program.

The primary demonstration objective was to "test the impact on pass sales and thereby transit riding of various methods of marketing monthly passes through employers...The ultimate goal [was] to increase transit ridership through extended availability of prepaid passes."¹ RT also cited the following secondary objectives for the demonstration:

- Institute payroll deduction as a form of pass payment;
- Develop, test and evaluate strategies for obtaining employer participation;
- Test the impact of price discounts;
- Improve the relationship between RT and the local business community;
- Improve RT's cash flow through earlier passenger revenue receipts; and
- Advance transit passes as an employee fringe benefit.

¹ Sacramento Regional Transit District, Demonstration Application Program Narrative, Sacramento, California, November 24, 1976, page 2.

Halfway through the distribution phase of the demonstration, on July 1, 1979, the scope of RT's efforts under the UMTA Service and Methods Demonstrations grant was expanded to include the unification of all of RT's pass sales activities under one administrative regime. Thus, during the final year of the demonstration, the initially-separate administrations of the "Monthly PASSpoRT" program and the sales of passes through all other public and private outlets were gradually consolidated. By the end of the demonstration in June 1980, all pass sales were commonly administered out of the newly-created Fare Prepayment Department.

2.2 DEMONSTRATION DESCRIPTION

After the initial organizational phase that ran from October 1977 to March 1978, the demonstration consisted of two overlapping phases. During the solicitation phase, which began in March 1978 and ended in October 1978, RT actively solicited employers to participate in the PASSpoRT program; it succeeded in signing up 53 employers. The distribution phase, which involved the sale of passes by participating employers, began with the sale of July passes in late June 1978 (although one employer was permitted to start selling May passes in late April) and continued through June 1980. A chronology for the demonstration is shown in Exhibit 2.1.

For the months of October, November, and December 1978, passes sold by employers were priced at \$9 rather than the usual \$12 pass price. This 25% discount offered by RT encouraged employers to participate in the program and attracted additional pass purchasers. Most employers began pass sales in October or November 1978.

The majority of American transit systems offer some type of transit fare prepayment, either in the form of passes good for unlimited rides during a specified time period, or tickets good for a specified number of rides. These passes and tickets are typically sold at public outlets located in government buildings, retail stores, or banks. RT had an extensive public pass program in place prior to the demonstration, and about 20% of RT's daily ridership already used monthly passes.

By focusing on employer pass sales, the demonstration introduced an innovation that has previously had limited national exposure. Employers sell transit passes internally in several transit systems around the country, including Boston, Los Angeles, Pittsburgh, Seattle, Chicago, and Denver. The largest and most successful of these is the program operated by the Massachusetts Bay Transit Authority

Exhibit 2.1

CHRONOLOGY OF EVENTS FOR THE SACRAMENTO TRANSIT FARE PREPAYMENT DEMONSTRATION

DATE	DEMONSTRATION EVENTS	EXOGENOUS EVENTS	MEASUREMENTS
Late October, 1977	Hiring of Demonstration Project Manager		
March, 1978	Initiation of solicitation of employers to participate in demonstration		
April-September, 1978			First Employee Survey (given to all employees, except for random sample in case of two largest employers)
May, 1978	Initiation of pass sales by first employer		
June, 1978	Initiation of pass sales by first group of 8 participating employers (sale of July passes). Distribution of announcements describing demonstration directly to bus riders		
October-December, 1978	Sale of passes with 25% discount. Total number of employers participating rose to 34 in October and 52 in November and December	SRTD kiosk in CBD closed between October 27 and December 8 inclusive (due to problem of safety of kiosk employees)	
Late November-Early December, 1978			Second Employee Survey (given only to buyers of December passes)
February 22, 1979		Closing of 3rd largest CBD pass sales outlet (Weinstock's)	
March 16, 1979		RT kiosk closed permanently; new RT "Passenger Service Center" one block from kiosk opened in Savings & Loan building	
May, 1979		SRTD strike	
Late August-October, 1979			Third Employee Survey (postponed from April due to strike; same distribution strategy as First Employee Survey)
September 1, 1979		SRTD fare increase	
June 1980	End of Demonstration		End of data considered in the Evaluation

(MBTA) in Boston. Initiated in 1974, the program now has over 800 participating employers. Another large program is operated by the Chicago Transit Authority (CTA), with over 115 employers involved. Unlike Sacramento and most other existing pass programs, the MBTA had no public pass outlets until 1979, and employers therefore had a greater incentive to join the program. In Chicago, the monthly pass is still only available through employers.

2.3 ORGANIZATIONAL ROLES

The demonstration organization is charted in Exhibit 2.2. The Sacramento Regional Transit District (RT) implemented the project under a funding contract with the Urban Mass Transportation Administration (UMTA). Four subcontractors assisted RT in the areas of public relations, advertising, and data collection. Peter Higgins & Associates provided public relations and advertising services between February and May 1978, when RT terminated their contract. They were replaced in June by the Runyon Agency (for public relations) and Tsuruda & Read (for advertising). Management Consulting Corporation performed data collection activities during the entire demonstration.

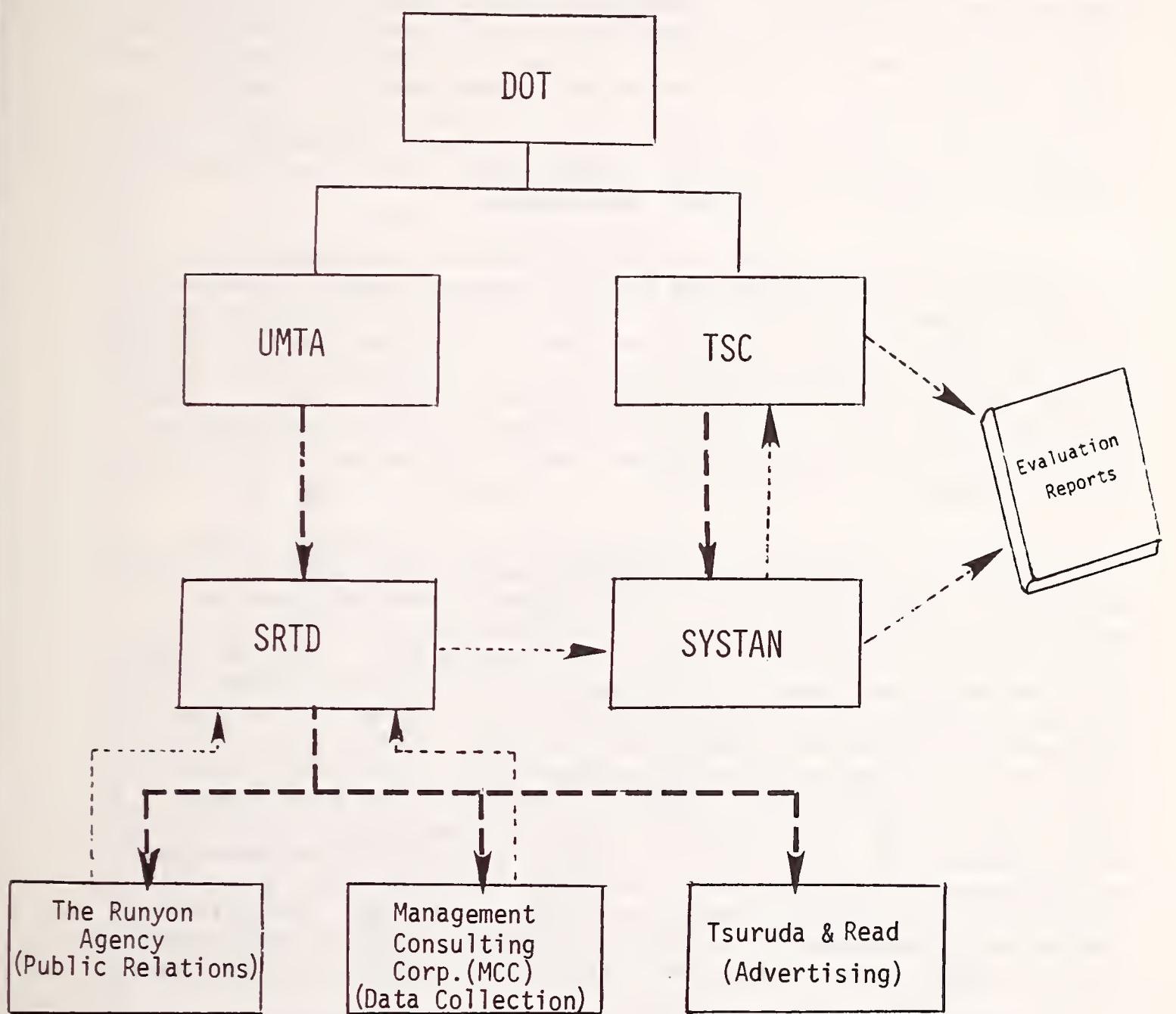
The Transportation Systems Center (TSC) of the U.S. Department of Transportation is responsible for the evaluation of all UMTA Service and Methods Demonstration (SMD) projects. TSC contracted SYSTAN, Inc. to evaluate the Sacramento demonstration; this report summarizes SYSTAN's evaluation findings. TSC will include the results of the Sacramento evaluation in its annual Service and Methods Demonstration Report, which will cover all SMD projects and identify trends across these projects.

2.4 DEMONSTRATION BUDGET

The total demonstration budget was \$169,765, of which 85% was funded by UMTA through Grant No. CA-06-0102. The remaining 15% was funded by RT. The original demonstration budget was \$119,765, which was increased by \$50,000 in August 1978 in order to finance an expanded discount program and more extensive public relations and advertising efforts. Actual expenditures are reported in Chapter 6.

EXHIBIT 2.2

ORGANIZATIONS INVOLVED IN THE SACRAMENTO DEMONSTRATION



----- Evaluation Information

— — — Contract

DOT - U.S. Department of Transportation

UMTA - Urban Mass Transportation Administration

TSC - Transportation Systems Center

RT - Sacramento Regional Transit District

2.5 EVALUATION OVERVIEW AND GUIDE FOR THE READER

This evaluation report documents the demonstration implementation process (Chapter 4) and analyzes how the demonstration innovations -- employer-based pass sales and the three-month discount -- affected travel behavior (Chapter 5) and RT operations (Chapter 6). Chapter 6 also discusses the costs and benefits of the program to employers. Chapter 3 describes the local setting of the demonstration, focusing on the unique characteristics that may have influenced the outcome of the demonstration or that may limit the transferability of results to other urban areas.

The analysis of demonstration impacts was conducted in a stepwise manner according to an assumed causal sequence of events, shown in Exhibit 2.3. First, RT solicited employers to participate in the demonstration. Employer participation and the pass discount promotion then influenced monthly pass sales, which in turn affected employee travel behavior and transit ridership. Finally, the demonstration implementation affected RT administrative costs, while employee behavioral changes affected RT's fare revenues.

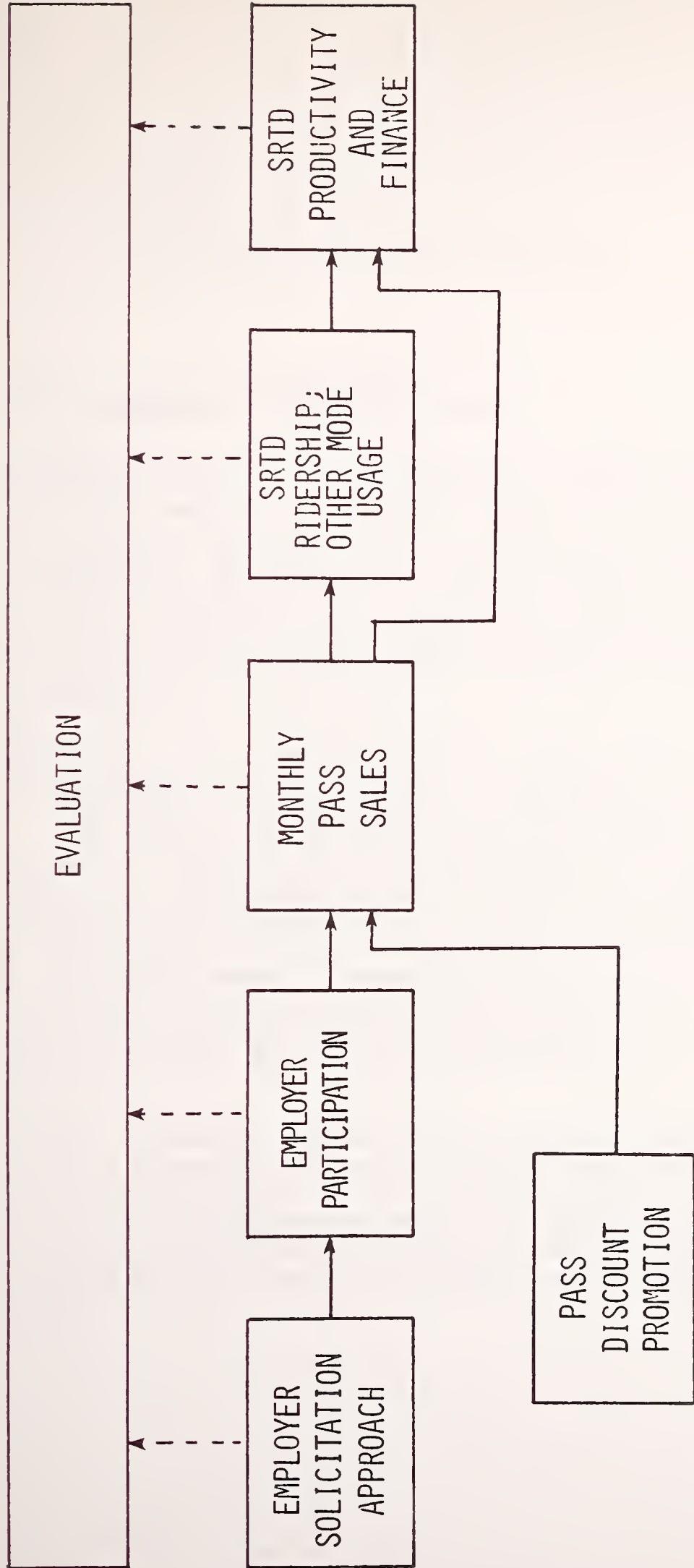
Several data sources have been used to support the evaluation. RT maintained monthly pass sales data for each public and employer outlet, tabulated RT administrative costs, and documented much of the communication occurring with employers during the solicitation phase. Most of the data on employee behavioral changes were derived from three employee surveys, one conducted before a firm joined the PASSPORT program, one conducted during the discount period, and the last conducted about nine months after the discount. Employers reported their administrative costs each month until June 1979. In addition, SYSTAN contacted officials of each company in July 1979 to obtain additional information on employer participation. Finally, as part of a study on the cost of providing employee parking, in May 1980 SYSTAN contacted officials of a sample of participating employers to determine their perceived and actual costs for parking.

Detailed descriptions of the evaluation methodology, including analysis and data collection plans, are contained in the evaluation plan for the demonstration².

² SYSTAN, Inc., Evaluation Plan for the Sacramento Transit Fare Prepayment Demonstration (August 1978, Los Altos, California).

EXHIBIT 2 . 3

EVALUATION OF THE SACRAMENTO TRANSIT FARE REPAYMENT DEMONSTRATION



3. THE DEMONSTRATION SETTING

3.1 THE SACRAMENTO METROPOLITAN AREA

The demonstration took place in the Sacramento, California metropolitan area, where public transit service is provided by the Sacramento Regional Transit District (Exhibit 3.1). Most transit service is confined to the northern part of Sacramento County, where most of the County's population lives, although parts of adjacent Yolo and Placer Counties are also served. All employers who participated in the demonstration are in Sacramento County, the majority being located in the central business district (CBD) of the City of Sacramento.

Exhibit 3.2 lists key demographic characteristics of the City and County of Sacramento. The rapidly-growing County of Sacramento had an estimated population of 702,000 in 1976. The City of Sacramento, containing 262,000 persons, has a low population density compared to other medium-sized cities. A key feature of the Sacramento area is the heavy reliance of the local area on public employment. Sacramento is the capital of California, and the location of two U.S. Air Force bases. Consequently, it has twice as many government workers as the national average, and relatively few jobs in manufacturing companies. In 1972, Sacramento County had only 28 manufacturing companies with over 100 employees.

Personal income in Sacramento is higher than average, and automobile ownership is also much higher, especially outside the central city. Public transit usage is low compared to cities of comparable size, although transit usage roughly doubled during the mid-1970's. An extensive freeway system, including six freeways linked near the CBD, provides fast automobile travel.

EXHIBIT 3.1

SACRAMENTO REGIONAL TRANSIT DISTRICT

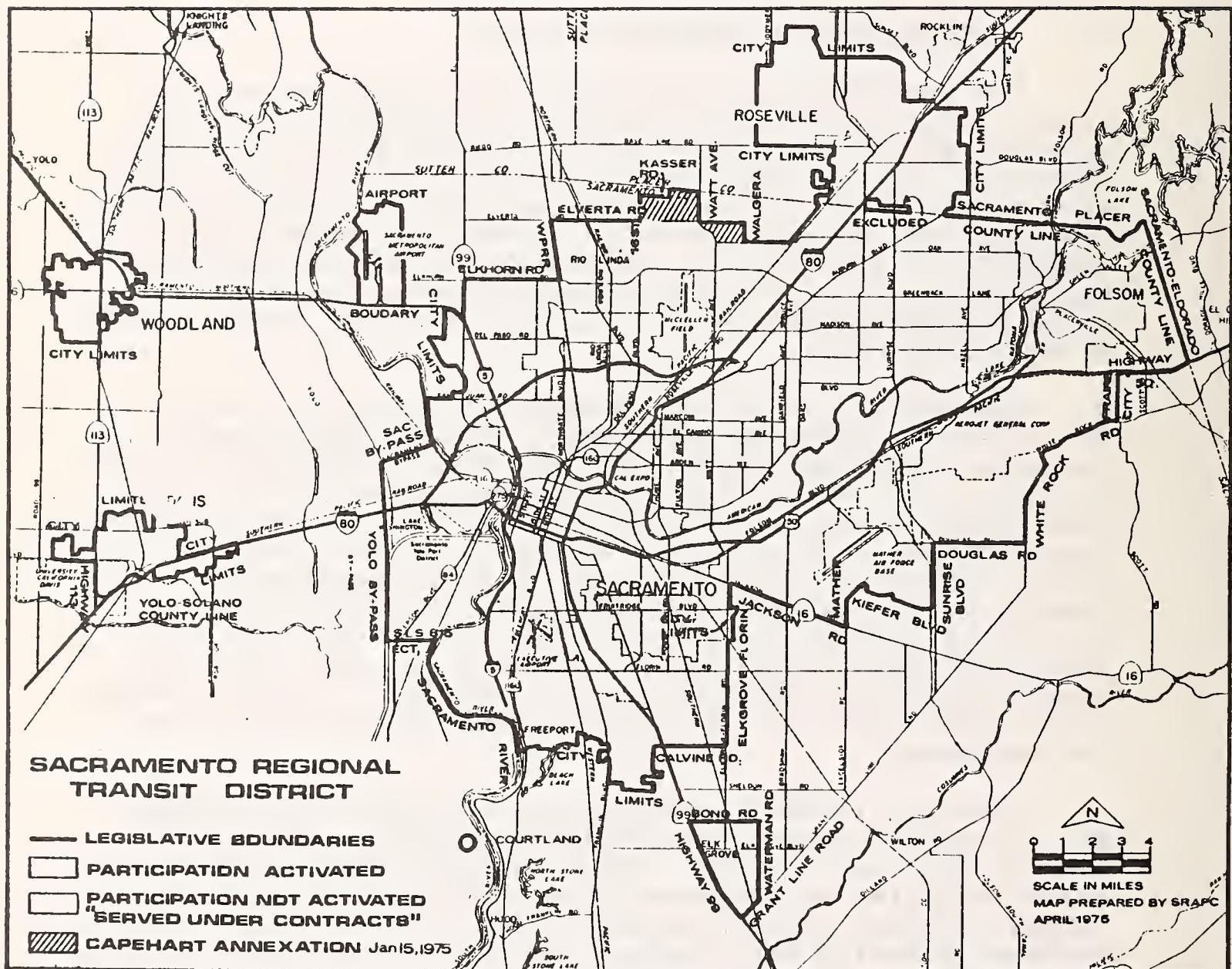


EXHIBIT 3.2

DEMOGRAPHIC CHARACTERISTICS OF THE CITY AND COUNTY OF SACRAMENTO

(1970 Unless Otherwise Noted)

	<u>Sacramento County</u>	<u>City of Sacramento</u>	<u>U.S. Average (Urban & Rural)</u>
Population (1976 est.)	702,000	262,000	--
Population (1970)	631,498	254,413	--
Percent Change (1970-1976)	11.2	0.1	--
Area (Square Miles)	975	94	--
Population Density (Pop./Sq.Mi.)	706	2778	5.0
Black Population (% of Total)	5.8	10.7	11.1
Population Age 65 or Over (% of Total)	7.1	11.0	9.8
Population Under 18 (% of Total)	35.7	31.9	34.0
Percent of Population in Labor Force	40.9	40.8	42.1
Percent of Employment in:			
Government	35.2	36.7	15.8
Manufacturing Industries	9.3	8.9	26.4
Wholesale & Retail Trade	21.3	21.6	19.1
Median Family Income (1969)	\$10,561	\$9,708	\$9,590
Owner-Occupied Housing Units (%)	61.8	57.3	62.9
Household Automobile Ownership (%)			
0 cars	10.7	18.8	18.6
1 car	44.7	47.1	51.4
2 cars	36.5	28.4	24.3
3 or more cars	8.1	5.8	5.7
Means of Transportation to Work (%)			
Auto Driven	78.4	73.5	66.0
Auto Passenger	10.4	11.7	11.7
Transit	2.5	5.3	7.8
Walk	3.7	4.8	7.4
Worked at Home	2.0	1.9	3.5
Other	3.0	2.9	3.6
Location of Workplace (%)			
Sacramento CBD	6.3	9.3	--
Remainder of City of Sacramento	58.6	70.8	--
Remainder of Sacramento County	28.4	14.4	--
Outside County	6.7	5.5	--

3.2 THE SACRAMENTO REGIONAL TRANSIT DISTRICT

3.2.1 History

Between 1955 and 1973, the city-owned Sacramento Transit Authority provided public transit service within the City of Sacramento, but very limited service was offered in the suburbs surrounding the central city. However, by 1973, less than one-half of the urbanized area's population was located within the City of Sacramento, and a need developed for a regionwide transit system. In response, the State Legislature created the Sacramento Regional Transit District in 1973. The urbanized areas of Sacramento and Yolo Counties and the cities of Davis, Folsom, Roseville and Woodland (each about 20 miles from downtown Sacramento) were included in the geographical boundaries of the district. Altogether, a 385 square mile area is included. Only the City and County of Sacramento participate in the governing of the District; the remaining areas are served on a contractual basis.

RT began transit operations on April 1, 1973, and rapid expansion followed. In 1973, the Sacramento Transit Authority operated 115 buses and carried about six million passengers annually. In 1977, RT was using 223 buses to transport about 12.6 million passengers, or about 45,000 passengers per weekday.

Between 1973 and 1976, RT substantially increased route mileage and service frequency, and implemented extensive express service between downtown Sacramento and outlying suburban areas. Three downtown shuttle services are currently operated. Altogether, RT vehicle mileage more than doubled between 1973 and 1976, to about 9.0 million annual vehicle-miles. Vehicle productivity during this period remained fairly constant at around 1.4 passengers per vehicle-mile, significantly less than the national bus transit system average of 2.6.

RT operations were interrupted by a 46-day drivers' strike in April and May 1976. The strike appeared to result in an 8% decrease in ridership after service resumed. A fare increase occurred shortly after the strike was settled, so the long-term impact of the strike is unclear.

3.2.2 Current Operation

Present RT service is primarily CBD-oriented, but many routes converge at four suburban shopping malls (Sunrise Mall, Florin Center, Arden Fair and Country Club Center). The California State University, located about three miles east of the CBD, is an additional focal point for transit routes (see Exhibit 3.3). Approximately 17% of all transit trips made require a transfer, at these or other transfer points.

The level of service provided has not changed substantially since 1976, and average ridership has also been fairly level since the 1976 drivers' strike. A 1/4-cent sales tax transit funding proposition was placed on the ballot in November 1979 in order to finance additional expansions, including the possible development of a light-rail system. The voters defeated this proposal.

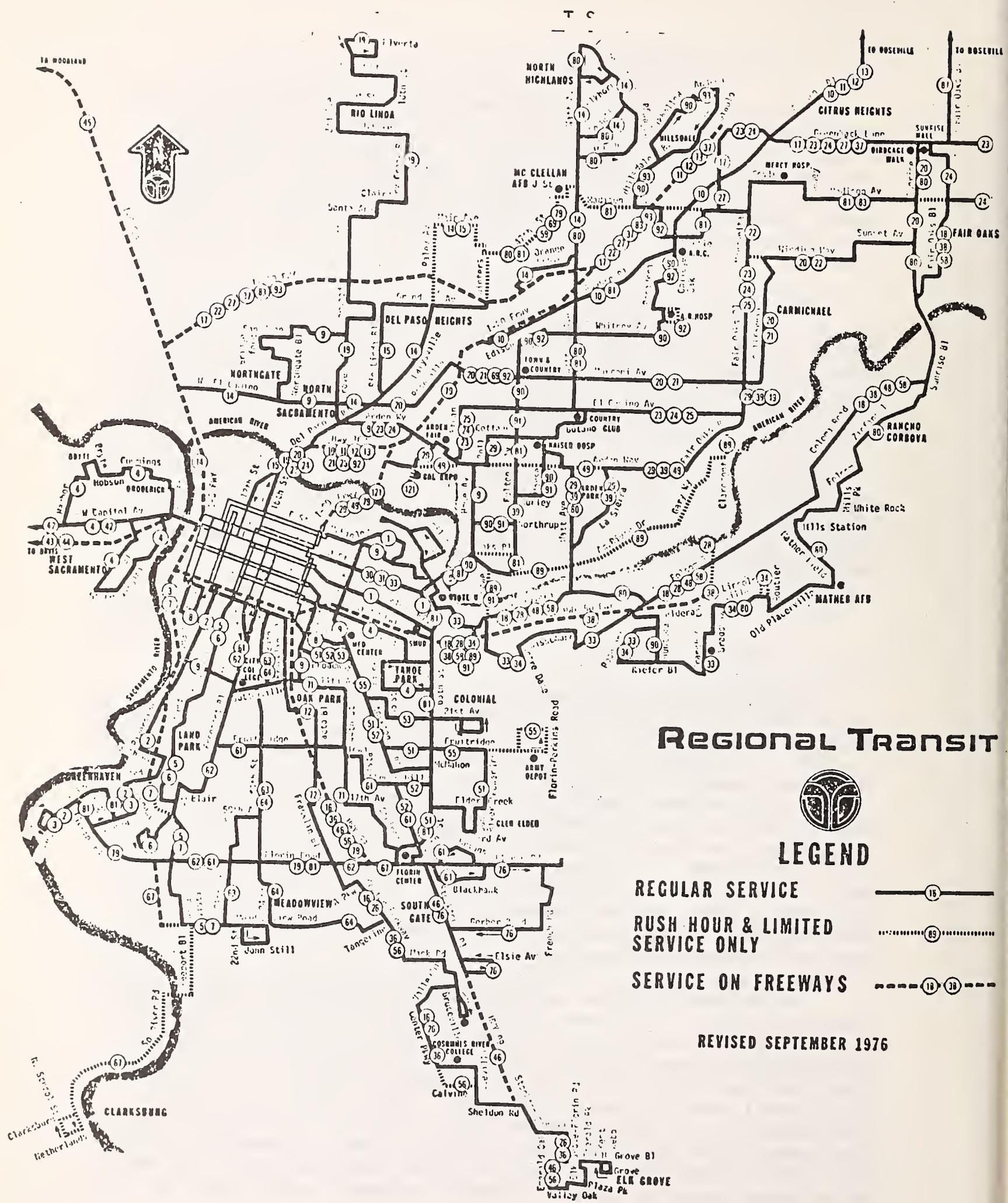
During the fiscal year ending June 30, 1978, total operating costs were \$13.5 million, and operating revenues totaled \$3.4 million, resulting in a revenue recovery rate of 25% (Exhibit 3.4). This is compared to a national average fare recovery of about 52% of costs.

3.2.3 Fare Structure

Before being replaced by RT, the Sacramento Transit Authority had a 25-cent base fare and zonal fares up to a maximum of 65 cents. When RT commenced operations on April 1, 1973, a 25-cent flat fare replaced the zonal fare system, and a \$10 monthly pass and 50-cent daily pass were introduced. The monthly pass was sold at outlets throughout the metropolitan area, beginning on the 25th day of the month preceding the month of use. The daily pass was sold on board the buses. Approximately 1,000 monthly passes were sold each month, representing 5% to 10% of total ridership, and nearly half of the remaining riders used daily passes. The monthly passes were transferable, provided the users were not traveling together.

On August 1, 1976, a general fare increase took effect (Exhibit 3.5). The base fare was raised to 35 cents, and riders from the outlying cities of Davis, Folsom, Roseville and Woodland were charged 50 cents on inbound trips (i.e., they paid a 15-cent zone fare in addition to the 35-cent base fare) and 35 cents outbound. Daily pass fares were increased to 70 cents and 85 cents (to and from Davis, Folsom, Roseville and Woodland). The prices of monthly passes were also raised to \$12 (\$15 for the four outlying cities). With these fare increases, monthly passes represented a 12%

EXHIBIT 3.3: RT SYSTEM MAP



Regional Transit



LEGEND

REGULAR SERVICE

**RUSH HOUR & LIMITED
SERVICE ONLY**

SERVICE ON FREEWAYS

REVISED SEPTEMBER 1976

EXHIBIT 3.4
RT FINANCIAL STATEMENT
(Fiscal Year Ending June 30, 1978)

Operating Expenses

Transportation	\$ 8,631,467	63.8%
Maintenance	1,664,132	12.3%
Planning, Marketing, and Scheduling	641,128	4.7%
Claims and Insurance	542,747	4.0%
Administration	867,787	6.4%
Service Information	352,541	2.6%
Depreciation	825,171	6.1%
	<hr/>	<hr/>
	\$13,524,973	100.0%

Total Cost Per Passenger: \$ 1.06
Total Cost Per Vehicle-Hour: \$24.22
Total Cost Per Vehicle-Mile: \$ 1.53

Revenues

Farebox Revenues	\$ 3,224,584	24.0%
Charter	115,940	0.9%
Advertising	64,214	0.5%
State Transportation Development		
Act Funding	6,364,029	47.5%
City of Sacramento	2,439,466	
County of Sacramento	3,425,627	
County of Yolo	134,205	
City of Davis	184,281	
City of Folsom	19,140	
City of Roseville	112,418	
City of Woodland	48,892	
Local General Funds	916,271	6.8%
City of Sacramento	879,671	
County of Sacramento	33,600	
County of Yolo	3,000	
Federal Funding	2,576,731	19.2%
Section 5	2,496,228	
Section 9	80,503	
Other Income	150,496	1.1%
	<hr/>	<hr/>
	\$13,412,265	100.0%

EXHIBIT 3.5

RT FARE STRUCTURE

<u>Payment Method</u>	<u>August 1976 to August 1979</u>	<u>Effective September 1, 1979</u>
<u>Cash Fares</u>		
Regular	\$.35	\$.50
Youth, elderly, handicapped	.15	.20
From outlying cities (inbound only)	.50	.75
<u>Daily Pass</u>		
Regular	.70	1.00
Youth, elderly, handicapped	.30	.40
From outlying cities (inbound only)	.85	1.25
<u>Monthly Pass</u>		
Regular	\$ 12	\$ 16
Elderly, handicapped	3	4
From outlying cities	15	20
<u>Regular Pass Discount</u>		
(based on 40 trips per month)	14.3%	20.0%

to 14% discount for the daily user (based on 40 trips per month), and sales quickly tripled to almost 3,000 passes per month. Pass sales continued to increase for the next three years, although at a decreasing percentage rate (see Chapter 5). Over 4,000 passes were sold each month during the spring of 1978 as the demonstration began.

On September 1, 1979, fares were again increased. Both cash and pass charges were raised, but the pass became an even greater bargain for the daily commuter (a 20% discount). As expected, and as discussed in Chapter 5, pass sales increased noticeably.

In addition to the \$16 monthly pass, RT also sells a \$4 monthly sticker. This is attached to the monthly pass to make it valid for trips from the four outlying cities served. In addition, the sticker, when attached to an RT photo identification card carried by elderly and handicapped persons, serves as a monthly pass. During the spring of 1978, before employer pass sales began, about 2,300 stickers were being sold each month. Most were used by elderly and handicapped persons rather than general riders, but no data is available with which to make a precise breakdown. Based on the number of stickers sold by employers during the demonstration (for which there would be a very small elderly and handicapped market), it is estimated that 90% of the stickers are used by elderly and handicapped persons.

Although there are no free or reduced-cost transfer fares, a passenger expecting to make at least two trips by transit in a given day can buy a daily pass when boarding the first bus and thereby obtain free transferring privileges. A one-trip passenger without a daily or monthly pass who transfers during his trip, however, has to pay an additional fare for each transfer. Persons purchasing daily passes, therefore, can be assumed to be those using the daily pass for convenience only, those having to transfer, and those using the bus more than twice that day. In an October 1977 systemwide on-board survey, slightly over half of all boarding passengers either bought or used a daily pass. About 20% used a monthly pass, and only 30% paid individual cash fares. Both daily and monthly pass usage had increased substantially since the previous on-board survey in May 1974, when about 6% of all the riders used monthly passes and about 40% used daily passes.

3.2.4 Pass Sales Outlets

When the first employer began selling passes for May 1978, they were available to the general public at 35 locations, providing excellent coverage of the RT service area (Exhibits 3.6 and 3.7). Two of these outlets were operated by RT: a downtown information kiosk, which sold nearly half of all passes sold, and the main office reception area. The remaining outlets were located at government office buildings (4), retail stores (6), banks (20), and colleges (3). RT does not pay these outlets a commission; however, prior to the unification of all pass-sales activities under RT's new "Fare Prepayment Department", they could use the cash collected for passes sold until they had to pay RT at the end of the month. During the course of the demonstration the number of public pass sales outlets continued to increase slowly.

Six of the 35 public outlets functioning at the time employer-based sales began were located in the downtown area: the RT kiosk, Weinstock's, Macy's, the Water Resources Building, the California State Department of Transportation, and a Sacramento Savings and Loan branch. Together, they sold about two-third of all passes. Four major shopping malls had two outlets each: a Weinstock's department store and a Sacramento Savings and Loan branch. About one-sixth of all passes were sold at these locations.

The only preexisting employer pass outlet was the Sacramento Regional Area Planning Commission (SRAPC), which distributed free passes to those employees who pledged to use the bus for commuting. Ever since late 1976 SRAPC has dispensed approximately 50 passes each month.

3.3 IMPORTANT EXOGENOUS EVENTS AFFECTING THE DEMONSTRATION

3.3.1 Change of Demonstration Subcontractors

When the demonstration began in November 1977, RT requested proposals to conduct demonstration data collection, public relations and advertising. RT selected a small local advertising agency to do both the public relations and advertising for the demonstration. The firm's functions were to assist RT in soliciting employer participation, prepare press releases, develop a public information campaign, and design and produce all required advertising materials. Work began on February 24, 1978, following UMTA approval of the contract.

For about two and one-half months, the firm performed satisfactorily and, according to RT's project manager, pro-

EXHIBIT 3.6

PASS SALES OUTLETS EXISTING AT START OF DEMONSTRATION

<u>Outlet and Location</u>	<u>Passes Sold for Use in March 1978</u>	<u>Percent</u>
RT Kiosk (9th and K Streets)	2,022	46.0
RT Main Office (28th and N Streets)	190	4.3
Weinstock's Cashier Offices:		
12th and K Streets	253	5.8
Florin Mall	206	4.7
Sunrise Mall	171	3.9
Country Club Center	162	3.7
Arden Fair	85	1.9
Macy's Cashier Office (5th and L Streets)	213	4.8
Water Resources Building (12th and N Streets)	442	10.1
Caltrans (11th and N Streets)	174	4.0
American River College Business Office (College Park Drive)	87	2.0
California State University at Sacramento (Carlson Drive and J Street)	74	1.7
Sacramento City College Controller's Office (Freeport Boulevard)	125	2.8
Sacramento Savings and Loan Association (14 outlets)	74	1.7
Guild Savings and Loan Association (6 outlets)	33	0.8
Sacramento Regional Area Planning Commission (8th and H Streets)*	52	1.2
Woodland City Hall	12	0.3
Roseville City Hall	14	0.3
Alta California Regional (El Camino Avenue)*	1	0.0
Sacramento City Schools*	9	0.2
TOTAL	4339	100.0

*Internal sales only; not for general public.

EXHIBIT 3.7

MAP OF MONTHLY PASS SALES OUTLETS



duced excellent artwork. In early May, however, the firm had a major organizational shakeup, with the result that for about three weeks little work was accomplished by the firm: no new employers were solicited, leads were not followed up, press releases about firms signing up for participation were never released, and requested artwork for posters was not completed. On May 22, the firm requested termination of its contract effective May 31. RT agreed, and subsequently awarded contracts on June 21 to the Runyon Agency (for public relations) and Tsuruda & Read (for advertising). Unfortunately, more than a month transpired during which very little public relations or promotional work was accomplished. Occurring just before the major start-up of employer pass sales (at the end of June), this gap in promotional effort slowed the project's momentum considerably.

3.3.2 Pass Sales Outlet Changes

A series of changes at two of the major public pass sales outlets also affected the demonstration. First, on October 26, 1978, the downtown RT Kiosk was closed because the sales clerk was being harassed by persons loitering on the K Street Mall, where the Kiosk was located. Since November passes were on sale for only two days, only 296 passes were sold, compared to 1,519 in October. RT reopened the Kiosk on December 9, but its new hours were from 9:30 A.M. to 1:00 P.M., compared to 10:00 A.M. to 5:20 P.M. before the closing. Only a handful of December passes were sold, although January pass sales rebounded to 751 (roughly half the pre-closing average). The Kiosk was permanently closed on March 16; an RT "Passenger Service Center" was opened a week later at a San Francisco Federal Savings and Loan Association branch located one block away at Tenth and K Streets.

The closing of the RT Kiosk in October 1978 resulted in about half of RT's pass purchasers having to buy their passes elsewhere. This may have boosted employer pass sales during and after the discount period. Pass sales at Weinstock's downtown store (three blocks from the Kiosk) tripled during November and December, and were about two and one-half times the pre-closing average during January and February. Pass sales doubled at the downtown outlets at Macy's and Sacramento Savings & Loan. The public outlets located in the Water Resources and CALTRANS buildings experienced little change in pass sales, probably because many former purchasers working in these buildings switched to buying passes through their employers (viz., the California Department of Water Resources and CALTRANS), thereby offsetting new sales to persons diverted from the Kiosk.

Another outlet change was the permanent closing of the downtown Weinstock's outlet on February 22, 1979. This had been the third largest outlet, and had sold up to 572 passes in December 1978 when the RT Kiosk was closed. Weinstock's management decided that their cashier's office was spending too much time on pass sales, and stopped pass sales downtown; the four suburban stores continued to sell passes. Pass sales subsequently rose at the five downtown outlets, and downtown employer pass sales also increased slightly. This increase was estimated to be about 6% of total employer pass sales.

3.3.3 Regional Air Quality Plan

In October 1978, the Sacramento Regional Area Planning Commission (SRAPC) released its draft Air Quality Plan, which was finalized in December. SRAPC was charged by the U.S. Environmental Protection Agency and the California Air Resources Board with preparing the plan by January 1, 1979 in order to comply with the Federal Clean Air Act. The plan recommended implementing 28 measures, including the encouragement of employers to issue RT monthly passes to their employees as an employee benefit. Both the City and County of Sacramento adopted this recommendation, and will consider providing passes to their own employees in the future. In addition, the County will consider providing bus passes to citizens on jury duty.

The Air Quality Plan was released after RT's major employer solicitation effort, and consequently did not affect the decision by most employers to participate. However, it may have encouraged some of those employers considering dropping out to remain in the program. It may have also encouraged the four employers who joined the program in 1979 to participate, since RT did not actively solicit their involvement.

3.3.4 Gasoline Price Increases and Shortages

As had occurred throughout the nation, gasoline prices in Sacramento rose sharply during the first half of 1979, from an average of about 70 cents per gallon to over \$1.00 by the summer of 1979. In May 1979, some gasoline shortages occurred, but the gasoline lines that afflicted San Francisco and Los Angeles that month, and larger cities in the rest of the nation the following month, never materialized in Sacramento. Sacramento County consequently did not implement an "odd/even" gasoline sales program, or any other allocation rules. However, short lines (several cars) were

common, and few service stations were open at night or on weekends during May and June. Some impact on transit usage was inevitable, but it was clouded by a 23-day transit strike that occurred at about the same time.

3.3.5 RT Strike

The most significant exogenous event affecting the demonstration was the labor strike, which shut down RT operations between April 26 and May 19, 1979. The drivers' and mechanics' contracts had expired on March 31, but the unions continued working without a contract for almost four weeks. Their decision to strike coincided with the start of local gasoline shortages (see previous section).

Because of the strike, only a handful of May bus passes were sold, and pass sales and ridership dropped following the strike. The strike also disrupted RT's first effort to offer commercial discounts for other services to pass buyers. May pass holders were to have received discounts to the three-day Sacramento Jazz Festival (\$2 off on daily admissions and \$1 discounts on tickets for individual concerts) in late May. The situation was partially redeemed because the discounts were made available to holders of June passes, which went on sale officially on May 25, the first day of the Jazz Festival (see Section 4.6.3).

3.3.6 Fare Increase

As was mentioned in section 3.2.3, on September 1, 1979 a new set of bus fares went into effect (see Exhibit 3.5). This fare increase represents an exogenous event that affected pass sales. The price of a regular monthly pass increased from \$12 to \$16, a 33.3% increase. However, since the cost of a single regular fare increased 42.9% (from 35 cents to 50 cents), the monthly pass became a better bargain than it had been before. Based on 40 trips a month (essentially 20 round-trips a month, or just under 5 round-trips per week), prior to the fare hike the monthly pass was discounted 14.3% relative to paying 40 separate regular fares or buying 20 separate daily passes; after the September 1979 fare increase, the monthly pass was discounted 20%. Viewed another way, the new fare structure reduced the "break even" point for monthly passes from 34.29 trips per month to 32 trips per month. The decrease of 2.29 trips in the break-even frequency represents an effective additional discount on the monthly pass of 7%. The transit-using public recognized this fact and turned to purchase of the monthly pass in greater numbers than would otherwise have been the case.

4. DEMONSTRATION IMPLEMENTATION

4.1 PLANNING OF THE SACRAMENTO DEMONSTRATION

The Sacramento demonstration plan, first outlined in RT's 1976 grant application, was formalized by the Urban Institute in a July 1977 report prepared for the Urban Mass Transportation Administration¹. The Urban Institute document served as the initial demonstration work plan. It envisioned an 18-month demonstration divided into three distinct phases: a two-month organizational phase, a four-month solicitation phase, and a twelve-month distribution phase. Subsequent modification of the demonstration's work plan lengthened the distribution phase to 24 months, thereby extending the demonstration from one of 18 months to one of 30 months. In practice, the demonstration lasted 32.5 months, from mid-October 1977 until the end of June 1980.

4.1.1 Organizational Phase

According to the implementation plan, the major task for the first two months of the demonstration would be the hiring of subcontractors for public relations, advertising, and data collection activities. The plan also called for the preparation of a "sales kit" with which to solicit employer participation, the planning of a publicity campaign, the preparation of an evaluation data collection plan, and an inventory of major Sacramento employers according to industry type, size, and parking availability.

The organizational phase began in mid-October 1977 with SRTD's selection and hiring of the project manager for the demonstration, Ms. Beth F. Beach. In practice, this phase lasted almost five months, principally because it took four months to complete the process of subcontractor selection and to obtain all contract approvals.

¹ McGillivray, Robert G., Plan for Demonstration of Transit Fare Prepayment Promoted by Employers in Sacramento, The Urban Institute, Washington, D.C., 1977.

4.1.2 Solicitation Phase

The original implementation plan specified that during the third through sixth months of the demonstration, RT and its public relations subcontractor were to contact employers and solicit their participation in the demonstration. The goal was to have 30 participating employers, with most of them selling passes through payroll deduction. A diversity of firms--in terms of size, industry type, and location--was also sought. However, employers were to have at least 50 employees. Near the end of this phase, a promotional campaign to induce employees to purchase passes would occur.

The solicitation phase of the demonstration began effectively in March 1978, three months later than was anticipated in the original plan due to the delay in completing the organizational phase. It also lasted twice as long as planned -- eight months instead of four -- due to the low level of interest generated among employers during the first four months of solicitation effort. Section 4.3, Employer Solicitation and Response, gives the details concerning the implementation of the solicitation phase. It should be noted that the second four months of the solicitation phase, July-October 1978, coincided with the first four months of the distribution phase.

4.1.3 Distribution Phase

The original plan specified that during the final twelve months of the 18-month demonstration, passes would be sold at employer locations. According to this plan, toward the end of the distribution phase, employer-sold passes would be sold at a 50% discount for one month. The planned discount was subsequently lowered to a 25% discount, but, in addition, in August 1978 it was decided to extend the discount period to three months and have it take place earlier in the distribution phase than was originally planned. As was mentioned in Section 4.1, the demonstration's distribution phase was also extended an additional year. Thus, the distribution phase encompassed the sale of passes for July 1978 through June 1980.

4.2 SUBCONTRACTOR SELECTION

Soon after the demonstration project manager was hired in October 1977, requests for proposals (RFP's) for the public relations, advertising, and data collection subcontractor services were prepared. After being approved by RT and UMTA, the RFP's were mailed locally on November 21,

1977. Eight firms responded by the December 2 deadline, and five were interviewed during the week of December 11. RT then asked for final bids based on a more specific set of work tasks, and the lowest bidders were selected on January 23, 1978. On February 24, UMTA approved the contracts and the employer solicitation process was able to begin.

4.3 EMPLOYER SOLICITATION AND RESPONSE

4.3.1 Preliminary Efforts

Each subcontractor began working immediately following UMTA approval of the contracts. Management Consulting Corporation, the data processing subcontractor, prepared a listing of 180 major employers in the RT service area. The public relations and advertising firm began to help RT prepare an introductory letter to be sent to employers and an employer information kit that would explain everything an employer had to know about participating in the program. RT began sending the letter (see Exhibit 4.1) to employers on March 23 and continued the mailing through late May, when about 140 letters had been sent.

The project manager followed the letter with a telephone contact and, if the employer expressed interest, a meeting was arranged between RT and the employer. At this meeting, the project manager presented and reviewed the employer information kit (Appendix A). This information kit described procedures to be followed, and included forms to be used, a sample employee survey to be taken three times a year, and copies of program endorsements from prominent citizens and groups, such as the Mayor of Sacramento and the Sacramento Chamber of Commerce. The kit also included a copy of the paperback "Bus Book", a compact compendium of schedules for all RT routes and other information for bus users (published three times per year). Frequently, an employer would ask the project manager to explain what transit service was provided to that employer's location and to leave multiple copies of bus schedules and the "Bus Book".

RT also organized a project Booster Committee consisting of the following eleven local government and business leaders (not all were active committee members):

Roger Baccigaluppi, President, California Almond Growers Exchange;
Jim Carpenter, President, Sacramento Metropolitan Chamber of Commerce;
Donald Dresel, Chief Administrator, Mercy General Hospital;
Fred Freeman, Base Commander, McClellan Air Force Base;

**REGIONAL TRANSIT**

P.O. BOX 2110 • SACRAMENTO, CA 95810 • (916) 444-7591

If you told every one of your employees that you will pick them up, bring them to work, and take them home, what do you think their reaction would be? Just think -- they would no longer have to worry about automobile maintenance costs, gas money, parking money, or fighting rush hour traffic. And, those with unreliable cars could stop worrying about breakdowns and getting to work late -- or not at all.

Maybe YOU can't physically pick them up and take them home -- but you CAN "hire" a \$90,000, chauffeured bus to do it. Regional Transit is implementing an exciting Transit Fare Prepayment Program, called "MONTHLY PASSPORT". Under this program, which is being conducted in cooperation with the Urban Mass Transportation Administration, you can offer monthly prepaid bus passes to your employees as a fringe benefit. If you're now paying for employee parking, the cost difference will be negligible. And, even if you aren't, you are bound to share in long term community benefits, through the saving of precious energy, the reduction of air pollution, and the reduction in traffic congestion. Employers who do not care to offer the Passes to employees as a fringe benefit, can help them another way -- by making the Passes available through an easily administered Payroll Deduction Plan.

If such a program appeals to your sense of economics, employee's well being, company and community good will, consider taking part. We'll be calling you soon to show you how easily it is for your company to participate in our "MONTHLY PASSPORT" Program.

Sincerely,

Charles W. Thomas
General Manager

CWT:jan



Adriana Gianturco, Director, California State Department of Transportation;
Al Gilman, Regional Vice President, Bank of America;
Phillip Isenberg, Mayor of Sacramento;
Richard Marriott, former Mayor of Sacramento;
Brian Richter, County of Sacramento;
William Wallbridge, General Manager, Sacramento Municipal Utilities District; and
John Wochnick, Manager, Weinstock's Department Store.

The Booster Committee's function was to develop public awareness of the program and generate community support. The first Booster Committee meeting, held on April 11, was covered by local television, radio and newspapers, providing the first media publicity the project received. A second Booster Committee meeting was held on July 20. Both meetings dealt with the project's progress, problems encountered, and ways to increase project effectiveness.

A final preliminary effort was to obtain influential endorsements of the demonstration program. Several of the members of the Booster committee gave formal endorsements, and others were eventually obtained from the Lung Association, the Sacramento Safety Council, the California Almond Growers Exchange, the Sacramento County Executive and the California Governor's Office. Copies of the 14 endorsements received are included in Appendix B.

4.3.2 Employer Response

RT was disappointed by the initial employer response to solicitation efforts. By early June 1978, after three months of intensive effort, only ten firms had committed themselves to participating in the program. Eight of these firms started pass sales in July, the official pass sales starting date. One firm began in May because it wished to coordinate pass sales with the introduction of a CALTRANS-sponsored carpooling project. The tenth firm started in August. Of the firms contacted, over one hundred had refused to join.

When RT or its public relations subcontractor contacted an employer after it had received RT's introductory letter, the RT representative recorded the opinions expressed by the employer. Among those employers who refused to participate, there are records for 104 employers, which are tabulated in Exhibit 4.2.

EXHIBIT 4.2

REASONS CITED BY 104 EMPLOYERS FOR NOT PARTICIPATING IN THE DEMONSTRATION

<u>Reason</u>	<u>Number of Employers Citing Reason</u>	<u>Percent of Employers</u>
Little employee bus usage	37	35.6
Early, late or weekend working hours	28	26.9
Don't want or can't handle administrative work	9	8.7
Little employee interest in program	8	7.7
Employees need cars at work	8	7.7
Served by few transit routes	7	6.7
Have sufficient parking	7	6.7
Won't get involved in employee affairs	6	5.8
Passes already widely available	4	3.8
Employer too far from nearest bus stop	4	3.8
Employees live too far away to use bus	3	2.9
Employees work a three-day week only	2	1.9
Need approval from main office in another city	2	1.9
Seasonal employment	1	1.0
Requires union negotiation.	1	1.0
No specific reason given	13	12.5
	140	134.6

Multiple responses included.

The major reason for employer disinterest was the feeling that few of their employees used the bus, so that it would not be worthwhile to establish a program. Employers also reported that their working hours started and ended when RT offered little service, that RT provided poor service to their workplace even during peak periods, or that their employees needed their cars during working hours. Several employers were initially interested, but after taking an informal survey of their employees, found little interest to warrant participation. About 9% of those contacted were discouraged by the administrative requirements of the program; 6% said their company policy did not permit involvement in what they perceived to be their employees' personal concerns. A few also saw an insignificant convenience benefit to their employees from the program, because passes were already available at locations convenient to their workers.

The potential benefit of employer savings due to reduced parking costs, which RT had advanced in a general way (i.e., without an analysis of parking costs such as that shown in Appendix F) as a reason for joining the pass program, did not kindle much positive response among employers. Apparently, most employers perceived little opportunity in the near-term to reduce either the amount of parking they were providing for employees or their expenses associated with employee parking.

4.3.3 Second-Phase Solicitation

By late April 1978, it was obvious that there would not be 30 employers to begin July pass sales, as planned. Consequently, RT changed its method of inducing employer participation and expanded the one-month discount to a three-month promotion period.

Expanded Discount Period

While soliciting employers, one recurring theme encountered was that the employers saw little benefit of the program to their employees, especially since passes were already sold throughout the metropolitan area. The one-month \$3 discount planned for near the end of the demonstration was apparently an ineffective inducement, as was the appeal about the social and environmental benefits of the program. Government employers were somewhat more sympathetic to the social benefit argument, although some private employers saw it as an opportunity to enhance their public images. In general, employers joined the program if they perceived a concrete benefit to the company or its employees.

Recognizing these facts, RT realized that an additional incentive was necessary to induce more employers to join the program. After considering various alternatives, RT proposed a three-month 25% discount for employer-sold passes, to take place in October through December 1978, the fourth through sixth months of pass sales. RT applied to UMTA for additional funding in June, and approval was given in late August.

New Approach to Employer Solicitation

At about the same time that the expanded discount plan was conceived, RT hypothesized that employers would be more responsive to employee pressure to join the program than RT's solicitations. Beginning in June, RT shifted to this new tactic.

The first technique used was to conduct a brief on-board survey of all A.M. peak period bus riders between June 19 and June 29 (see Exhibit 4.3). RT had three reasons for conducting this survey. First, it made riders aware of the program and its potential benefit to them. This would presumably encourage employees to ask their employers about the program, who would then contact RT. Second, RT hoped to get new names of employers to contact where substantial numbers of employees rode the bus. And third, RT hoped to produce evidence showing that there were in fact bus riders from those firms where the managers claimed no one rode the bus to work as the reason employers cited for not wanting to participate.

The survey, which cost RT approximately \$1,500 to administer, resulted in many employers contacting RT to find out about the program. Sufficient interest was generated that RT never tabulated the results to find new employers to contact. Three employers -- Deseret Industries, Merchants National Bank, and the California Department of Insurance -- began selling passes in September as a result of employee interest generated by the survey. Several other firms that started in October and November had first contacted RT following the survey.

The other tactical change in soliciting employers was to use advertising directed at the general public, beginning in August 1978. On August 6 and 9, 2" X 4-1/2" advertisements appeared in the two major Sacramento newspapers, saying only "How would you like a \$198 a month raise?" On August 13th and August 20th, new ads ran with the same question plus the response "Ask your employer about the RT PASS-PORT Program or call 444-7591 for more information." The \$198 figure was the difference between the average local cost of automobile travel, calculated by CALTRANS, and the cost of an RT bus pass.

**REGIONAL TRANSIT**

P.O. BOX 2110 • SACRAMENTO, CA 95810 • (916) 444-7591

first letter
of employer's
name

ATTENTION: RT RIDERS

Regional Transit is offering an exciting new program to its passengers through their employers. It's called the MONTHLY PASSPORT program and will give you the convenience of purchasing a monthly bus pass where you work, through payroll deduction, as an over-the-counter sale, or in some cases it may be subsidized by your employer. The type of participation depends on the system that works best for you and your employer. As part of the program RT will be offering a one month discount of \$3 off the regular price of \$12 for a monthly bus pass.

In order to make sure that we contact your employer we're asking you to supply us with the name of the firm you work for by filling in the blank with your employer's name and address and returning this notice to us.

Employer's Name: _____

Street Address: _____

THANK YOU FOR YOUR HELP. PLEASE BE SURE TO RETURN THIS FORM TO THE RT REPRESENTATIVE BEFORE YOU LEAVE THE BUS.

At the same time, promotional posters were placed inside and outside buses, and on 33 bus benches throughout the city. In September, stickers saying "25% discount, October, November and December" were added across the outside bus signs. These generated so many inquiries from persons ineligible for the discount, and frequently angry as a result, that they were removed within two weeks. A new set of newspaper ads also appeared, this time listing employers already participating and advertising the 25% discount. Besides the advertising, the RT project manager appeared on two television talk shows in August and September, local newspapers and magazines ran several stories about the project following several press releases, and RT made a radio public service spot that played for about six weeks.

4.3.4 Employer Response

The new solicitation techniques greatly increased employer interest in the PASSport program, and employer signups accelerated (see Exhibit 4.4). Seven employers began in September, seventeen in October, and eighteen in November. (Actual participation would begin at least one-half month before this, when the firm would place an order for passes to be sold at the end of the month; see Section 4.6.2.) By November, 52 employers were participating, well over the initial goal of 30.

More employers wanted to participate, and RT was forced to institute two restrictions at that time in order to reduce administrative costs. First, employers had to commit themselves by October 15 in order to receive the 25% discount and, second, any employers signing up after that time had to guarantee that at least ten bus passes would be sold each month. Before this, RT accepted employers regardless of their size and the number of passes they ordered. Referring to Exhibit 4.5, it can be seen that in September 1978, for example, just prior to the discount period when only 17 employers were enrolled in the pass program, 71% (12 of 17) of the participating employers sold 10 or fewer passes. Due partly to RT's efforts to avoid signing up employers who could anticipate fewer than 10 sales monthly, but due also to the 25% discount, in November only 40% (21 of 52) of the employers sold 10 or fewer passes. Immediately after the discount period, in January 1979, 54% (27 of 50) of the employers sold 10 or fewer passes, a percentage which, though higher than for November when the discount elicited

EXHIBIT 4.4

PARTICIPATING EMPLOYERS AND NUMBER OF DROPOUTS

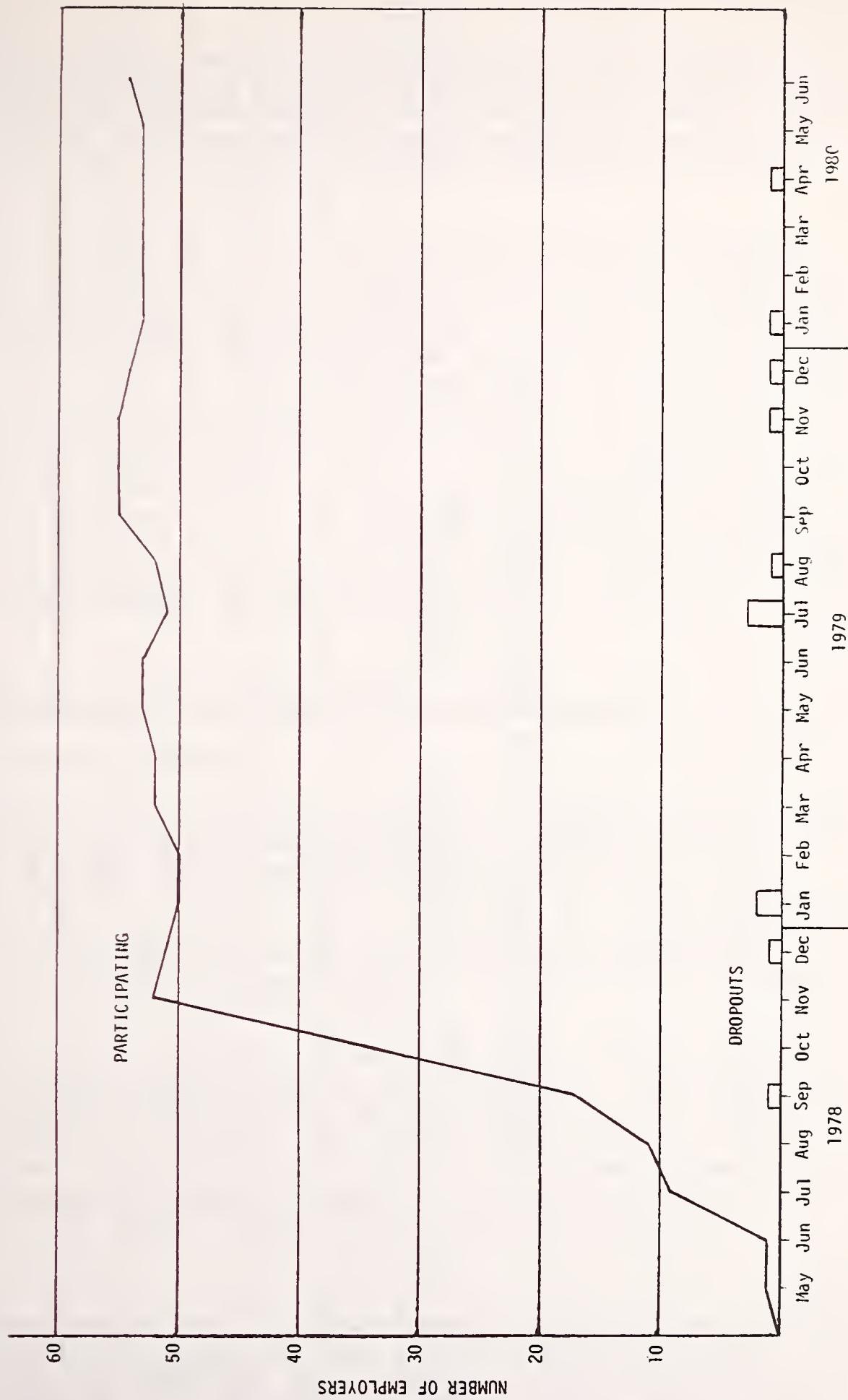


EXHIBIT 4.5

Percentage of Employers Selling Specified Number of Passes

Number of Passes Sold for Month	August 1978		September 1978		November 1978		January 1979		March 1979	
	11 Employers	17 Employers	17 Employers	52 Employers	52 Employers	50 Employers	50 Employers	52 Employers	52 Employers	52 Employers
None	18%	29%	6%	8%	8%					
5 or fewer	55%	53%	23%	38%	38%					
10 or fewer	64%	71%	40%	54%	54%					
20 or fewer	82%	82%	54%	70%	70%					
40 or fewer	91%	94%	67%	78%	78%					
80 or fewer	100%	100%	79%	96%	96%					

higher pass sales, is still substantially lower than the 71% before RT attempted to limit participation to firms that would guarantee minimum sales of 10 passes per month.² Exhibit 4.5 shows that the post-discount pattern of employer sales in January carried over almost identically to March 1979.

Although the new solicitation approach was successful in terms of increasing the number of participating employers and generating community interest, the 25% discount had one drawback -- RT received considerable criticism for applying a selective discount that benefited only part of the population. From the time the discount was publicly announced in mid-September until the end of October, RT was bombarded by complaints that the program was unfair to those who were ineligible. RT estimated that 30 to 50 telephone calls were received daily during this period. RT thus suffered some loss of esteem because of the discount, although this was presumably made up by the benefit to those eligible for the discount. During the last two months of the discount, there were more discounted than non-discounted passes sold.

4.4 CHARACTERISTICS OF PARTICIPATING EMPLOYERS

4.4.1 Type of Industry

Exhibit 4.6 classifies by industry the 52 employers who were participating in the program as of November 1978. Since that time, there has been a small turnover in the group of participating employers, with eleven additions and ten deletions. A maximum of 55 employers has participated in any given month. This section's analysis considers mainly the 52 employers as of November 1978 whose employees were eligible for the \$3 discount.

Government agencies dominate the list, with slightly over half the firms and 83% of the employees. The employee figure is heavily influenced by the 17,000 employees of McClellan Air Force Base; omitting them results in government workers comprising 73% of the eligible employees. The exceptionally heavy concentration of government agencies suggests that public employers may be more likely to

² The requirement that at least ten bus passes be sold each month does not appear to have been enforced for those employers who actually enrolled in the pass program at the time the 10-pass minimum was a stated requirement. However, the requirement may have dissuaded some employers from enrolling and may have spurred some joining firms in their efforts to promote pass sales.

EXHIBIT 4.6

CLASSIFICATION OF PARTICIPATING EMPLOYERS BY INDUSTRY TYPE
 (As of November 1978)

Type of Firm	Number of Firms	Percent	Estimated Number of Employees	Percent	Percent of All Sacramento Co. Workers
Government (State)	25	48	18,216	38	25
Government (Federal)	2	4	17,157	36	
Government (Local)	3	6	4,540	9	11
Public Utilities, Communications	1	2	700	1	4
Service (Finance, Insurance, Real Estate)	8	15	1,184	2	5
Service (Health)	3	6	3,580	7	12
Other Services (Education, Business, Law)	3	6	280	1	
Manufacturing	2	4	2,350	5	9
Retail Trade	4	8	214	1	17
Wholesale Trade	1	2	50	-	4
Construction, Transportation, and Related Industries	-	-	--	--	13
TOTAL	52	100	48,271	100	

participate in a public transit pass sales program than private employers. Additional factors may be the greater size of government agencies (see Section 4.4.2 below) and their generally good accessibility to transit (see Section 4.4.3). Among the private sector employers, financial institutions were somewhat more inclined to join than other firms. Although the absence of employee parking or the cost of paying a portion of employees' parking fees (see Section 4.4.4) may have figured significantly, the availability of good transit service afforded by a CBD location and a regular five-day work week probably played a dominant role in the decisions of those banks joining the pass program. Retail stores have the problem that their workers usually work irregular hours and on Saturdays, which makes it more difficult to use a transit system that best serves the peak hours (see Section 4.3.2).

4.4.2 Size of Firms

Exhibit 4.7 classifies participating employers by size. The majority of the private firms were small; 13 of the 22 firms employed fewer than 100 workers. The government firms were larger and more varied; one-third had fewer than 150 employees, one-third had between 150 and 1,000 employees, and one-third employed over 1,000 workers. The average public firm had 1,330 employees (785 excluding McClellan Air Force Base), compared to 380 for the private sector employers. The difference probably reflects real differences in the sizes of public and private employers.

Six of the participating firms had fewer than 50 employees, and another five reported having exactly 50 employees. Although the original plan was to accept only firms with 50 or more employees, this guideline was relaxed (with UMTA concurrence) in the face of some special requests from smaller employers and the initial difficulty in recruiting employers.

4.4.3 Firm Locations

Exhibit 4.8 classifies participating employers by location relative to the level of transit service received. Three categories have been selected. The first is the Central Business District (CBD), where an employer would not be more than a few blocks from all bus routes serving the downtown area. This is an approximately 10 by 11 block area (3/4 square miles) from 4th to 14th Streets and G to R Streets. Thirty-five, or about two-thirds of the employers, were located in the CBD. "Fair transit coverage" includes

EXHIBIT 4.7

CLASSIFICATION OF PARTICIPATING EMPLOYERS BY SIZE OF FIRM

(As of November 1978)

	NUMBER OF FIRMS		
	<u>Government</u>	<u>Private Sector</u>	<u>Total</u>
1 - 49 employees	1	5	6
50-200 employees	11	10	21
201-999 employees	8	4	12
1000 or more employees	<u>10</u>	<u>3</u>	<u>13</u>
TOTAL	30	22	52

EXHIBIT 4.8

CLASSIFICATION OF PARTICIPATING EMPLOYERS BY LEVEL OF
TRANSIT SERVICE PROVIDED TO WORKPLACE

	<u>Number of Firms</u>		
	<u>Government</u>	<u>Private Sector</u>	<u>Total</u>
Central Business District	25	10	35
Fair Transit Coverage	3	4	7
Poor Transit Coverage	<u>2</u>	<u>8</u>	<u>10</u>
TOTAL	30	22	52

those firms on the periphery of the CBD, as well as firms located outside downtown but still served by several routes. Firms having "poor coverage" are served by only one or two routes. Seven firms had fair coverage; ten firms had poor coverage.

The government employers were more concentrated in the CBD, with 25 of the 30 public employers located there. The private employers were more representative of the actual distribution of employment. Under half were in the CBD, while over one-third were in locations having little transit service.

4.4.4 Availability and Cost of Employee Parking

The availability and cost of parking for employees was examined to see to what extent a lack of sufficient parking or the costliness of parking might have functioned as deterrents to commuting by car and as stimulants to the use of bus transit in Sacramento. As detailed below, principally only CBD employees faced a shortage of parking and the need to pay \$10 or more per month for parking. For CBD employees facing a parking cost approximating the cost of a monthly transit pass, the switch from automobile commuting to transit commuting would appear to be a feasible and economical alternative. Such a switch would probably be accelerated if, as a consequence of recognizing the possible cost savings to themselves, more employers offered their employees a free or subsidized monthly transit pass instead of a free or subsidized parking space. As detailed in Appendix F and briefly reported on in section 4.4.6 under "Parking and Other Subsidies," the cost of a monthly transit pass is generally considerably lower than the cost of providing a parking place.

Parking Provided by Employers

Information on the parking provided for employees was obtained from 46 participating firms. At eight firms located in the CBD, no parking whatsoever was provided; at the remaining firms, between four and 18,000 parking spaces were available for employees. Exhibit 4.9 shows the ratio of parking spaces to employees for these 46 employers, emphasizing the differences between CBD and non-CBD employers. Within the CBD, most firms can only provide parking for a small proportion of their employees. Of the 36 CBD employers contacted (including four that did not know the exact number of spaces provided), 31 said that employee parking was either inadequate or nonexistent. Outside the CBD, all employers provided some employee parking, and over half the firms provide parking for 50% to 100% of their

EXHIBIT 4.9

RATIO OF PARKING SPACES PROVIDED TO EMPLOYEES
FOR 46 PARTICIPATING FIRMS

<u>Spaces/Employees</u>	<u>LOCATION</u>		
	<u>CBD</u>	<u>Non-CBD</u>	<u>Total</u>
No parking available	8	0	8
0.01 - 0.25	15	2	17
0.25 - 0.50	7	3	10
0.50 - 0.75	0	5	5
0.75 - 1.00	2	0	2
1.00 - 1.25	<u>0</u>	<u>4</u>	<u>4</u>
TOTAL	32	14	46

employees. Among 16 non-CBD employers, only five said that there was insufficient parking available (including consideration of street parking if available and convenient).

At those employers where parking was provided for employees, employees either parked free or paid far less than the free market price. In most cases, the employer owned the parking, but at several CBD employers, the employer paid part of the cost at commercial lots. Outside the CBD, 12 of the 16 employers provided free parking; employees of the other four firms paid between \$2 and \$9 per month. Within the CBD, out of 27 employers who provided some parking, six had free parking; most of the others (State agencies) charged \$10.50 per month, the standard State charge for downtown employee parking. Four other employers charged between \$10.00 and \$22.00 per month.

As of March 1979, the State of California provided 3,726 open-lot spaces for downtown employees at a monthly cost of \$10.50; an additional 367 garage spaces rented at \$18.50 per month, and 665 spaces located about one-half mile from the CBD rented for \$6 per month and were connected to the CBD by a free shuttle bus provided by RT. More than 20,000 State workers are employed in the downtown Sacramento area, or over four times the number of available parking spaces. Almost all State agencies have waiting lists for parking, and handicapped persons and carpools have priority over single drivers.

Other CBD Parking Available to Employees

Municipal and commercial parking is also available in the CBD, but at a much higher user cost than that provided by employers. A 1976 parking study estimated a total CBD parking supply of about 25,200 spaces, including 4,600 on-street spaces (mostly metered at 25 cents per hour), and 20,600 off-street spaces.³ Of the off-street spaces, 12,300 were reserved for employees and 8,300 were for public use.

Most of the public spaces are owned by the City, and monthly charges at the City lots range from \$20 to \$40, averaging \$27.50. Carpools pay 75% of the regular rate. The daily rate is \$3.55 at all lots, and the hourly rate is 25 cents per hour for the first three hours, and 40 cents per hour for additional hours. The County of Sacramento operates an open lot and a 388-space garage; it has only an hourly rate -- 25 cents per hour -- that applies during the twelve hours that the facilities are open daily.

³ Sacramento Regional Area Planning Commission, Sacramento Central City Study, Sacramento, California, September 1976.

Several commercial lots are scattered around the CBD, charging monthly rates between \$21 and \$52.50. The average for ten lots surveyed by telephone was \$28.85, comparable to the municipal lots. Daily rates were lower, ranging from \$1 to \$3.50 and averaging \$2.38. Hourly rates averaged 42 cents per hour, ranging from \$0.25 to \$0.70.

A CBD parking usage study was conducted in 1975. The overall peak utilization rate (the maximum percentage of spaces occupied) was 73%. This ranged from 54% in parking areas reserved for retail customers, to 90% in on-street parking without time limits. The other categories were on-street parking with a time limit (68%), off-street public parking (70%) and off-street reserved parking (70%).

4.4.5 Pass Sales Methods

Three modes of pass sales were used during the demonstration, as shown in Exhibit 4.10. For over-the-counter sales, an employer ordered a quantity of passes from RT, which were then sold individually at a location within the firm beginning on the 25th day of the month preceding the month for which the pass was valid. The employer then returned all unsold passes and money for the passes sold to RT. For payroll deduction, the cost of the pass was deducted from an employee's paycheck. Two variations were used. Some employers required advance notice and then bought the specific number of passes for which deductions had been authorized by employees. Alternatively, some employers ordered a larger quantity of passes, distributed them to employees ordering them, and deducted the money from paychecks. As in over-the-counter sales, the employer returned unsold passes along with payment for the passes sold. Under the subscription method, employees ordered passes in advance, the employer ordered the specific number of passes requested, employees then paid for the passes with cash or check, and the employer forwarded the money to RT.

The overwhelming majority of employers sold passes over-the-counter, while about one-seventh offered payroll deduction as a payment method. The use of payroll deduction was less frequent than RT's marketing materials suggest was originally anticipated. Two firms offered both over-the-counter sales and payroll deduction, while six firms sold passes by subscription, a compromise method. No significant difference in payment methods existed between public and private employers.

Among employers selling passes over the counter, three of the 38 firms contacted reported selling passes for only one hour per day. The remainder sold passes during the

EXHIBIT 4.10

CLASSIFICATION OF PARTICIPATING EMPLOYERS BY PASS SALES METHOD

<u>Payment Method</u>	NUMBER OF FIRMS		
	<u>Government</u>	<u>Private Sector</u>	<u>Total*</u>
Over the counter	24	17	41
Payroll deduction	5	2	7
Subscription	<u>3</u>	<u>3</u>	<u>6</u>
TOTAL	32	22	54

* Total number of firms exceeds 52 because two government employers offered both over-the-counter and payroll deduction sales.

entire day. Most accepted cash or checks from customers; no employers reported accepting credit cards. At those firms using payroll deduction or subscription, employees had to order a pass by the tenth or fifteenth day of the month prior to pass usage. One firm with payroll deduction required notice by the seventh, while one subscription firm ordered extra passes from RT and let employees sign up until the 25th, when they would all be distributed and the extras returned to RT.

4.4.6 Employer Subsidies

Pass Subsidies

Seven of the 66 employers (about 11%) who participated in the demonstration subsidized the cost of monthly passes, but one of these offered a subsidy for only the first two months of its participation and another started its subsidy the last month of the demonstration. Although employer subsidization was an objective of the demonstration, no numerical goal was set. In comparison, about 3% of the employers in Boston's pass program subsidize passes for their employees.

The Sacramento Municipal Utilities District (SMUD) was the first employer to sell passes and the only one to offer a subsidy during the entire distribution phase of the demonstration. SMUD, which employs some 700 people at its non-CBD headquarters and has another 700 "field" employees, subsidized the cost of passes by \$6 (this represented a 50% subsidy until the increase in pass price from \$12 to \$16 on September 1, 1979). That subsidy was continued during the three-month discount period, so passes cost employees only \$3 during those months. After the expiration of RT's 25% discount, more than two-thirds of all employer-subsidized passes sold each month were accounted for by SMUD's sales to its employees (except for the last month of the demonstration, when SMUD's sales were 62% of all sales of employer-subsidized passes).⁴

The second subsidizing employer was the California Almond Growers Exchange (CAGE), which paid \$5 of the cost of the pass in September 1978, the first month of their pass sales, and \$2 in October 1978. The purpose of this

⁴ Over the two years of the demonstration's distribution phase, SMUD's monthly sales volume rose from 50 passes to 110 passes. As discussed below, in the last month of the demonstration (June 1980), Mercy Hospital began a program of 100% subsidy of the transit pass.

temporary subsidy was to promote the pass program.⁵

Four of the employers that began pass sales in 1979 also provided subsidies for their employees. CH2M-Hill, an engineering company with about 36 office-based employees, began pass sales in March 1979 and paid half of the pass cost. The Lung Association (about 6 employees), a public interest group offering pass sales starting in June 1979, paid 100% of the cost. Starting in July 1979, Community Services Planning Council Inc. provided 100%-subsidized passes to interested employees (9 to 15 passes were distributed each month). Two months later, United Way began giving passes (100% subsidy) to employees committed to commuting by transit (3 to 6 passes issued per month).

Prompted by a shortage of parking spaces, in the final month of the demonstration Mercy General Hospital began offering monthly transit passes free to employees. That first month of the hospital's new 100%-subsidy program, twenty-six employees obtained free transit passes in exchange for their individual signed pledges to use transit instead of their cars for commuting to work. Before the subsidy, only five to nine employees bought passes at the hospital each month.⁶

Parking and Other Subsidies

The initial solicitation letter sent by RT to employers (see Exhibit 4.1) tried to draw attention to the possible trade-off between paying for parking for employees and paying for bus passes for employees. As has just been discussed in the previous section, few employers responded to the idea of subsidizing the purchase of bus passes by employees in lieu of subsidizing employee parking costs. In fact, not counting employers who rented parking spaces for top executives only, as many employers made monthly out-of-pocket payments to employees in partial subsidy of parking costs as subsidized the purchase of a bus pass on a

⁵ Although CAGE employs several hundred people in the off-season and 2,000 people in the peak processing period, its highest monthly sales volume was 11 passes (during the 25% RT discount); the month after all discounts ended, 6 passes were sold, and after that monthly sales never exceeded 4 passes.

⁶ More than this number of employees could have been buying transit passes each month, since it was also possible to buy passes through numerous public outlets. Thus, it is possible that the increase in new transit commuters among the hospital's employees was not as great as the increase in the number of passes distributed by the hospital.

continuing basis (3 employers). One bank paid half (\$17.50) an employee's parking cost; another paid that part of an employee's parking costs above \$20 (which, in most cases, meant the bank paid \$16). A third employer, a hospital, paid \$7 of the \$10 parking fee in the lot used by employees. Moreover, those employers who did not pay an explicit subsidy to reduce their employees' net cost for parking gave an implicit subsidy in almost all cases where employee parking was provided. Furnishing free parking was the most common form of parking subsidy, followed by below-cost pricing of monthly parking rights.

Many employers, particularly those providing free parking, did not seem to recognize the magnitude of their subsidy to the automobile commuter by the provision of parking. For this reason, as a final data-gathering activity of the evaluation of the demonstration, discussions were held with a sample of the participating employers in May 1980 to determine their perceived and actual costs of providing parking for employees. The details concerning this parking-cost study are presented in Appendix F, but a brief report is useful here. No attempt was made to classify the employers' perceived cost of providing parking--responses ranged from free ("the parking spaces come with the lease") to "tremendously costly," with various specific values from \$7 to \$65 per month per space thrown in between (see Exhibit F.2, Appendix F, pp. F-5 to F-7). However, the data concerning the actual cost of parking has been organized in various tables in Appendix F (see Exhibits F.3, F.4, F.6, and F.8).

For the existing stock of off-street parking lots and parking structures in the central city area of Sacramento, \$40 appears to be the best round-number estimate of the monthly cost of providing a parking space. For new facilities, with the cost of land included, only in an open lot in the less expensive non-CBD areas of Sacramento could the monthly cost of providing a parking space be kept to less than \$40. In the non-prime areas of the CBD, a space in a new open lot would have a monthly cost of from \$50 to \$80. Each parking space made available in new parking structures (typically multi-level structures that may or may not be part of an office building) is estimated to have a cost between roughly \$80 and \$215 per month; the low end of the range would apply to an above-ground multi-level structure outside the CBD, and the high end of the range would apply to an underground parking garage in the prime area of the CBD (see Exhibit F.8). These results concerning the full cost of providing a parking space, i.e., the sum of the land cost, cost of capital improvements, and operating costs, show clearly that each new employer-provided parking space could have a monthly cost from two to five or more times higher than the cost of a monthly bus pass. For costs above

\$40 per month per space, some activity would have to be subsidizing parking, since the current marketplace typically charges \$40 or less per month per space.

A final type of subsidy was given by one CBD employer: the general transportation allowance. The firm, a law firm, provided each attorney a parking space at no charge because one parking stall per suite came with the lease of office space. Apparently after some urging by non-attorneys who were not provided parking space, the firm decided to give all non-attorneys a monthly transportation allowance of \$25. The recipient could use the allowance as she or he saw fit. For example, an employee could ask the firm to apply the \$25 towards the \$30 monthly cost of a parking space in the building where the offices were located. About one-third of the 30 non-attorneys use a part of the allowance to buy monthly bus passes.

4.5 ATTITUDES OF PARTICIPATING EMPLOYERS

Data on employer attitudes were derived from July 1979 discussions with representatives of participating employers. The representatives were usually the persons administering the pass sales program at each firm.

As illustrated in Exhibit 4.11, employers cited many reasons for joining the program. The 25% discount was cited by almost one-third of the participants; an equal number cited the convenience of the program for their employees. A substantial number of firms -- particularly government agencies and those participating as a result of employee requests -- mentioned the social and environmental benefits of transit use. Inadequate parking was seldom mentioned, despite the fact that most CBD firms did not have sufficient parking (see Section 4.4.4).

Employers generally felt the program was modestly worthwhile and beneficial. Most employers cited the improved convenience of commuting for those employees purchasing passes; four employers cited increased transit usage among their employees. Eight employers, however, did not see any particular benefit from the program because few workers purchased passes. Although the perceived benefits of the program, from the employer's standpoint, were not overwhelming, its costs were perceived to be negligible by nearly all of the firms. Only two of the employers contacted thought their administrative costs were significant. One of these firms dropped out of the program for this reason, and the second referred to the costs of administering the payroll deduction option. Two additional firms thought

EXHIBIT 4.11

REASONS THAT 49 EMPLOYERS JOINED THE PASS PROGRAM
(Source: Telephone Survey - July 1979)

	<u>Number of Firms Citing Reason</u>
Convenience for employees	15
25% discount advertisements	15
Induced by RT mailing or contact	12
Social and environmental benefits	12
Requested by employees	11
Many employees commute by bus	8
Inadequate parking	4
Other firms had joined	3
Articles or advertisements about program (other than for discount)	<u>3</u>
TOTAL	83

(Multiple responses permitted)

the start-up costs were substantial, and one firm cited the cost of administering the employee surveys for the program evaluation. Forty-four firms, however, felt that the total costs involved in administering the program were negligible.

4.6 ADMINISTRATION OF THE PASSPORT PROGRAM

4.6.1 Demonstration Management

A full-time project manager, reporting directly to RT's assistant general manager, was in charge of the demonstration. The project manager was assisted by half-time clerical support within RT and three subcontractors (see Sections 2.3 and 4.3). The public relations subcontractor helped solicit employers and prepared press releases to the media. The advertising subcontractor prepared promotional materials for employers, employees and the general public. The data collection subcontractor prepared a list of employers to be solicited, and administered three employee surveys, the first between April and September 1978, the second in December 1978, and the third between August and October 1979.

4.6.2 Pass Distribution and Revenue Collection

The basic process of pass distribution and revenue collection that was used during the first year of employer pass sales is described below. After July 1, 1979, some modifications to the timing were initiated as a result of a program to integrate all pass sales under a single administration by the end of the demonstration in June 1980 (see Section 2.1). Some of the significant later changes are mentioned in footnotes.

Each month, the pass distribution process began two weeks before the day the monthly passes would become valid. Each employer had to order by the 15th day of the month a specific number of \$12 passes and \$3 stickers (for zone charges and elderly and handicapped passes; see Section 3.2.3) valid for the coming month (see Appendix A for the order form used). As described in Section 4.4.5, in most cases an employer estimated the number of passes that would be sold, while in a few cases only the number of passes ordered by employees were ordered. At RT, the project manager tallied the orders and submitted a single order to the RT Accounting Department, which billed the demonstration project account. Clerical personnel then packaged individual employer pass orders and prepared invoices to accompany each. A messenger delivered most of the orders and invoices on the 20th through the 24th days of the month. RT mailed

passes and invoices to a dozen employers with small pass orders. Initially, this was done by registered mail, but RT later adopted the practice of sending orders valued at less than \$100 by certified, return-receipt-requested mail (less expensive than registered mail).

The employers sold or distributed the passes beginning on the 25th day of the month. Each employer then returned to RT by the fifth of the following month all unsold passes plus payment for sold passes.⁷ About half of the employers mailed them back, while half used messengers. A few employers paid with a single company check, but, in most cases, the employer submitted numerous employees' personal checks and cash. RT staff then checked the arithmetic of each submittal and updated each employer's account. Finally, the payments were aggregated and applied to the billing the project had received from the Accounting Department.⁸

During the three-month discount period, the procedure was essentially the same, with the pass price simply being lower, and the demonstration project making up the difference in the payment to the RT Accounting Department. For employers with payroll deductions, RT wrote individual rebate checks to purchasers each month so that the firms would not have to alter the pass price in their payroll deduction process.

4.6.3 Marketing and Promotion

Most of the marketing and promotion for the demonstration was done during the employer solicitation process described in Sections 4.3.1 and 4.3.3. In addition, the advertising subcontractor prepared posters and brochures for employees of participating firms. Exhibits 4.12 and 4.13 are samples of materials used during the demonstration. Multi-colored posters saying "Hop Aboard! The Regional Transit Monthly PASSPORT Program" were also distributed to employers for posting.

The majority of participating employers distributed information about the program directly to their employees. Of the 49 firms for which information on internal promotion

⁷ Under the revised system, employers may sell passes through the fifth of the month for which the pass is valid; they have until the 10th of the month to make payment to RT.

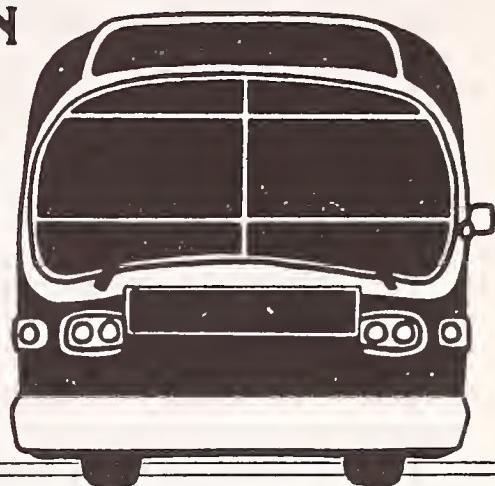
⁸ With the revised procedure, all payments are deposited to RT's account the same day they are received.

HOP ABOARD the REGIONAL TRANSIT Monthly **PASSPORT** Program

Your Company is one of only thirty in the Sacramento Area, who has been selected to participate in an exciting TRANSIT FARE PREPAYMENT TEST DEMONSTRATION, in cooperation with the Urban Mass Transportation Administration.

Under this program, you can now purchase a monthly bus pass right here at work! We think you're going to love the convenience. If you haven't already done so, ask your employer about the program today! Find out how nice it is to relax your way to and from work, instead of fighting it.

RT'S "MONTHLY PASSPORT" PROGRAM IS YOUR PASSPORT TO CONVENIENT, WORRY-FREE TRANSPORTATION



We thought you would like to know about a new and unique monthly RT PASSPORT Program, which is payroll deductible. It is designed for your benefit — providing fast, convenient access to your transit system which serves the entire Sacramento Area

RT'S "MONTHLY PASSPORT" SAVES TIME

The convenience of the PASSPORT eliminates the inconvenience of exact change for fares. No more waiting in line. Just show your PASSPORT!

RT'S "MONTHLY PASSPORT" SAVES ENERGY

Avoid the hassle of in-town driving, parking, towing and fines. Also, have the satisfaction of knowing you are contributing to energy conservation.

RT'S "MONTHLY PASSPORT" SAVES MONEY

The price of the PASSPORT is \$12.00 per month, based on 18 round trips. The average, of course, is 20 round trips per month — so you save \$2.00 a month right there. In addition, other members of your family can use your pass on weekends too! In fact, the more you use your PASSPORT, the more VALUABLE IT BECOMES!!!

HOW TO BECOME THE OWNER OF AN RT "MONTHLY PASSPORT"

- Read all the information on this information sheet
- Complete the attached authorization form.
- Return form to your designated "MONTHLY PASSPORT Administrator and become a PASSEnger now!"
- Your Administrator is:

CONDITIONS

1. You need only sign up once at your place of employment to receive your PASSPORT each month!
2. RT will offer new MONTHLY PASSPORTS each month to participants of the MONTHLY PASSPORT Program in good standing.
3. PASSPORT is valid for unlimited service.
4. A lost or stolen PASSPORT will not be replaced, nor refunds made.

was available, 22 reported distributing RT brochures, and 22 distributed an internal memorandum about the program, sometimes in conjunction with brochure distribution. Twenty-two firms also posted signs about the program. Only five firms, all very small, relied solely on word-of-mouth. The reported promotional techniques used by firms are listed in Exhibit 4.14.

RT made a major promotional breakthrough in March 1979 when the demonstration project manager negotiated the first commercial discount for RT pass purchasers. The Sacramento Jazz Festival, a three-day event on May 25-27, agreed to give an approximate 20% discount on ticket prices to holders of May monthly passes (\$2 off the \$10 daily ticket, \$1 off the \$5 or \$6 individual concert tickets).⁹ Unfortunately, this plan was disrupted by the RT strike in April and May 1979 (see Section 3.3.5). Few May passes were sold during this period, and the Sacramento Jazz Festival agreed to allow June pass holders to obtain the discount. June passes went on sale officially on May 25, the first day of the Jazz Festival. Thus, few persons were able to take advantage of the discount; the Jazz Festival reported only 40 discounted ticket sales. Nonetheless, considering the timing of the Jazz Festival with respect to the start of pass sales and the short notice RT patrons had concerning the discounts obtainable with a June RT pass, RT and Jazz Festival staff were generally pleased with the outcome.

A second commercial discount was negotiated for Cal Expo, the California State Fair, which was held from August 14 through September 4, 1979. August pass and stamp purchasers received a coupon good for 50 cents off the regular \$3 admission price on Mondays through Thursdays only.¹⁰ During the month of August, a total of 4,428 passes and 2,539 stickers were sold; since about 10% of these stickers are used by pass buyers for zone fare payment, about 6,700 coupons were distributed. Two hundred twenty-seven coupons were subsequently used for the 50-cent discount, or 3.4% of the total coupons distributed. The discount program was considered sufficiently successful by RT and Cal Expo staff that a repeat of the discount was arranged for Cal Expo '80 before the demonstration ended in June 1980.

⁹ Over the three days of the festival, a jazz buff with an RT monthly pass could get up to \$12 worth of discounts.

¹⁰ Since pass purchasers typically work every weekday, the restriction to Mondays through Thursdays limited the coupon's usefulness for the majority of employees.

EXHIBIT 4.14

INTERNAL PROGRAM PROMOTION BY 49 EMPLOYERS

<u>Promotion Method</u>	<u>Number of Firms Citing Promotion Method</u>
Word-of-mouth only	5
Internal memorandum	22
RT brochures distributed	22
RT posters displayed	22
Articles in company/agency newspaper, newsletters or bulletins	8
RT information given as part of new employee orientation	5
Discussed at staff meetings	3
Notices of pass availability posted monthly	<u>1</u>
TOTAL	88

(Multiple responses permitted)

Another commercial discount for holders of a monthly transit pass was arranged by the RT pass program manager with the operators of Circus Vargas. Holders of a monthly pass for May 1980 could receive a \$2 reduction in the \$6 regular price of a reserved seat at Circus Vargas performances between May 1-5, 1980.

4.6.4 RT/Employer Communication

During the demonstration, RT found that to assure smooth operation of the program it was essential to maintain close contact with employers and to provide assistance wherever possible. During the first month or two that an employer sold passes, RT assisted the employer in preparing his pass orders and helped estimate the number of passes required. During the discount period, when several employers ran short of passes as sales soared, RT made special deliveries to replenish supplies. Also during the discount period, the program manager sent a letter to all employers emphasizing the program's success, thanking them for their cooperation, and repeating some of the procedural rules of the program for their information. Another example of RT's support was the explanation that RT provided to each employer prior to each employee survey and the discussions conducted for the evaluation. Most important, RT tried to keep some staff members accessible for any questions and complaints that arose, and tried to work out problems fairly and quickly. RT viewed this close cooperation between themselves and the employers as a major reason for having only four dropouts during the first year.

5. EMPLOYEE RESPONSE

5.1 PASS SALES

5.1.1 Pre-Demonstration Pass Sales

Before the demonstration, monthly transit pass sales had been rising steadily since the August 1976 fare increase that discounted the pass for the daily user. As can be seen in Exhibit 5.1, a strong seasonal pattern emerged, with spring and fall pass sales about 20% higher than December, January, or the summer months. The highest pass sales total before the demonstration was in March 1978, two months before employer pass sales were initiated, when 4,399 passes were sold.

Controlling for the seasonal variation by comparing sales in a given month to those for the same month in the previous year, one obtains the data plotted in Exhibit 5.2. A 30% to 35% annual increase in late 1977 and early 1978 is apparent, prior to the start of employer pass sales.

Although the trend line in Exhibit 5.2 shows the percentage rate of growth slowly declining, Exhibit 5.1 shows that pass sales were following a definite upward trend at the time the sales of passes through employers began. This upward trend in pass sales was nearly linear, as can more clearly be seen by examining the twelve-month moving average (which effectively smooths out seasonal variations) for the thirteen twelve-month periods ending between September 1977 and September 1978 inclusive. The values calculated are shown in the top half of Exhibit 5.3. Over the thirteen months before employer sales began, the average monthly increase in sales was about 75 passes.

5.1.2 Employer Pass Sales

Pre-Discount Period

During the first two months of employer pass sales, the lone participating employer (SMUD) subsidized 50% of the pass cost and sold 50 and 57 passes in each month. Sixteen additional firms began pass sales in July through September, but most sold none or few passes. The 177 September passes

EXHIBIT 5.1

SRTD MONTHLY PASS SALES

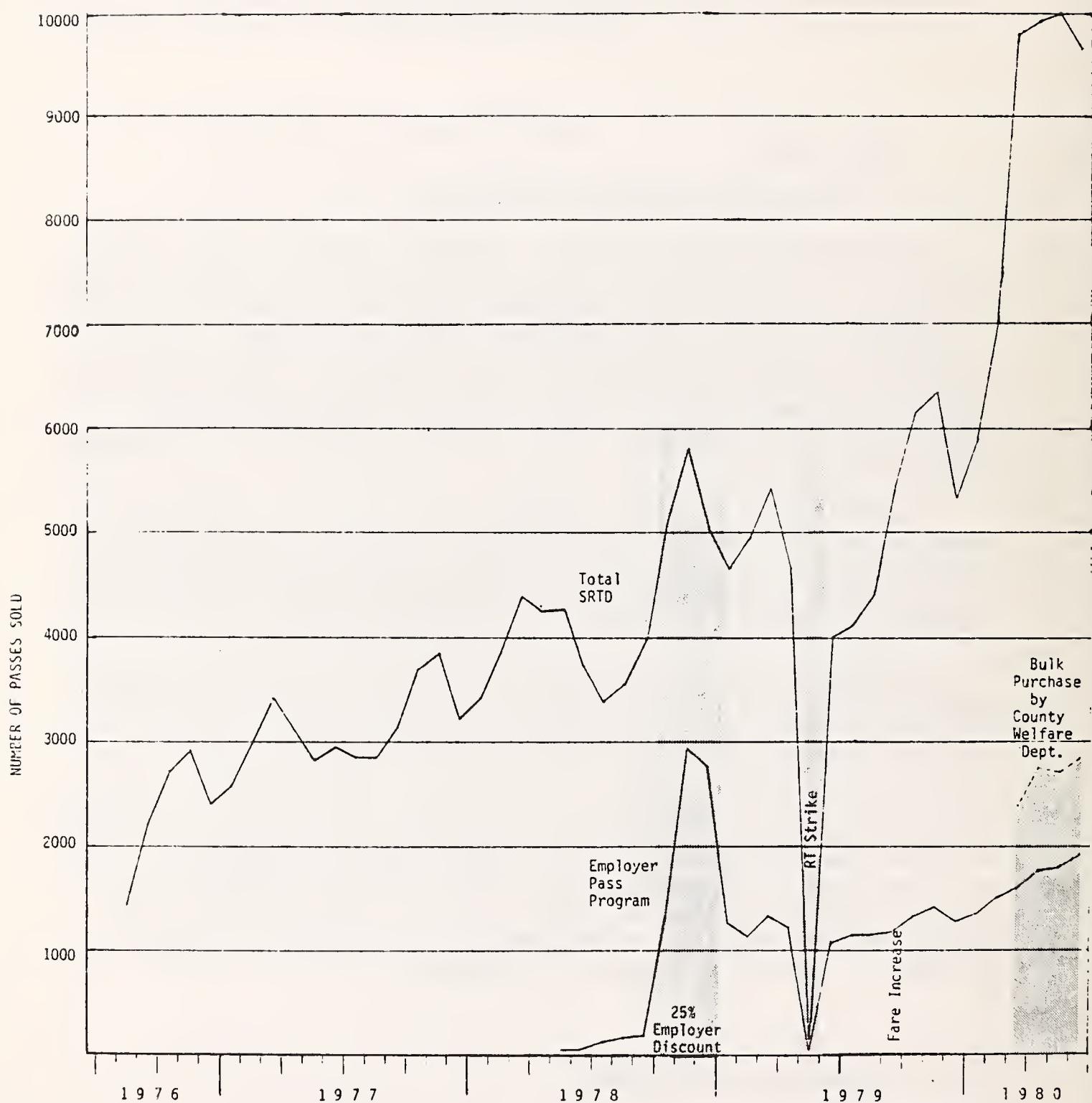
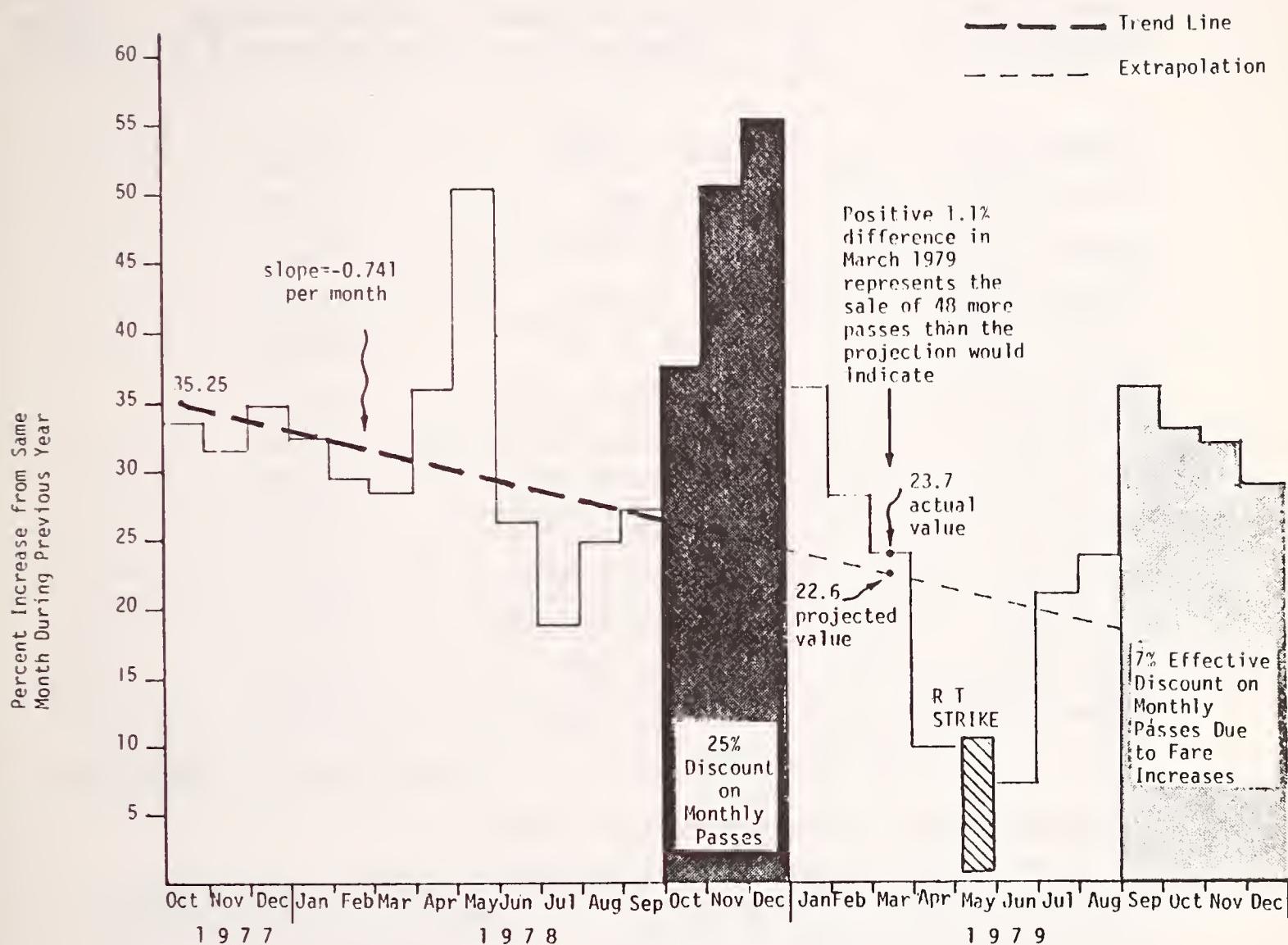


EXHIBIT 5.2

PERCENTAGE INCREASE IN SRTD MONTHLY PASS SALES
OVER SALES FOR SAME MONTH IN PREVIOUS YEAR



The comparisons for October/December 1979 are based on October/December 1978 projected levels rather than actual levels; actual levels were increased by the 25% discount.

EXHIBIT 5.3

TWELVE-MONTH MOVING AVERAGES FOR PASS SALES

<u>Ending Month of 12-Month Period</u>	<u>Middle of 12-Month Period</u>	<u>12-Month Moving Average of Pass Sales (Y)</u>	<u>Assigned Index Number (x)</u>
September 1977	April 1, 1977	2906	0
October 1977	May 1, 1977	2984	1
November 1977	June 1, 1977	3062	2
December 1977	July 1, 1977	3131	3
January 1978	August 1, 1977	3202	4
February 1978	September 1, 1979	3275	5
March 1978	October 1, 1977	3356	6
April 1978	November 1, 1977	3450	7
May 1978	December 1, 1977	3570	8
June 1978	January 1, 1978	3634	9
July 1978	February 1, 1978	3679	10
August 1978	March 1, 1978	3739	11
September 1978	April 1, 1978	3810	12

Trend Line: $Y = 2906 + 75.3x$

Percentage change in 12-month moving average:

$$\text{April 1, 1977 to April 1, 1978 --- } \frac{3810 - 2906}{2906} \times 100\% = 31.1\%$$

Projected values:

$$\begin{aligned} \text{March 1, 1979 } Y &= 2906 + 75.3(11+12) = 2906 + 75.3(23) = 2906 + 1732 = 4638 \\ \text{April 1, 1979 } Y &= 2906 + 75.3(12+12) = 2906 + 75.3(24) = 2906 + 1807 = 4713 \end{aligned}$$

Projected Percentage Changes in 12-Month moving average:

$$\text{March 1, 1978 to March 1, 1979 --- } \frac{4638 - 3739}{3739} \times 100\% = 24.0\%$$

$$\text{April 1, 1978 to April 1, 1979 --- } \frac{4713 - 3810}{3810} \times 100\% = 23.7\%$$

sold by employers represented only 4.4% of total RT pass sales that month (see Exhibit 5.4).

Discount Period

Employer pass sales soared in October and November 1978, because of the tripling of participating employers and the \$3 discount these months. Two thousand, nine hundred and forty-seven passes were sold in November, 51% of all passes sold by RT. In December, when no new employers were added, the proportion of total passes sold by employers increased to 55%, despite a small drop in the absolute number of passes sold. At \$9, the monthly pass was still worthwhile to the employee, even if he or she intended to take a few days off during the Christmas holiday. December employer pass sales thus dropped less than at the public outlets, where the \$12 pass price was less attractive during the holiday season.

At the 17 employers who began pass sales before the discount period, pass sales nearly tripled in response to the discount. This was influenced by several factors other than the discount: seven of the seventeen employers started selling passes during the previous month, and some natural growth was expected; two of the employers with their own subsidy programs influenced the results; and there were seasonal factors and other growth trends influencing sales. Taking these factors into consideration, gains of around 250% at these employers are estimated to be due to the discount. (This does not imply a 250% increase in the number of employees using passes, since many purchasers of discounted passes previously purchased passes at public outlets; see Section 5.1.3.)

The pass sales trends in 1976 and 1977 suggest that without discounting, October 1978 pass sales would have been about 16% above September's, November about 20% above September, and December 2% to 3% higher than for September. Among all seventeen employers, October pass sales were up 92% from September, and November and December sales were up about 175% (see Exhibit 5.5). However, one employer, the California Almond Growers Exchange (CAGE), subsidized passes in September and October, so that its employees paid \$7 in September (the first month of sales), \$7 in October, and \$9 in November and December. Also, SMUD employees paid \$6 in September and \$3 in October through December, resulting in a different relative discount than at the other firms. Excluding these two employers, gains of up to 268% over September occurred. However, this growth was calculated using a September sales base of only 111 passes, with almost half the employers participating in September having just begun selling passes for September, so such a large percentage gain may therefore overstate to some extent the effect of

EXHIBIT 5.4

PERCENT OF TOTAL MONTHLY PASSES SOLD BY EMPLOYERS

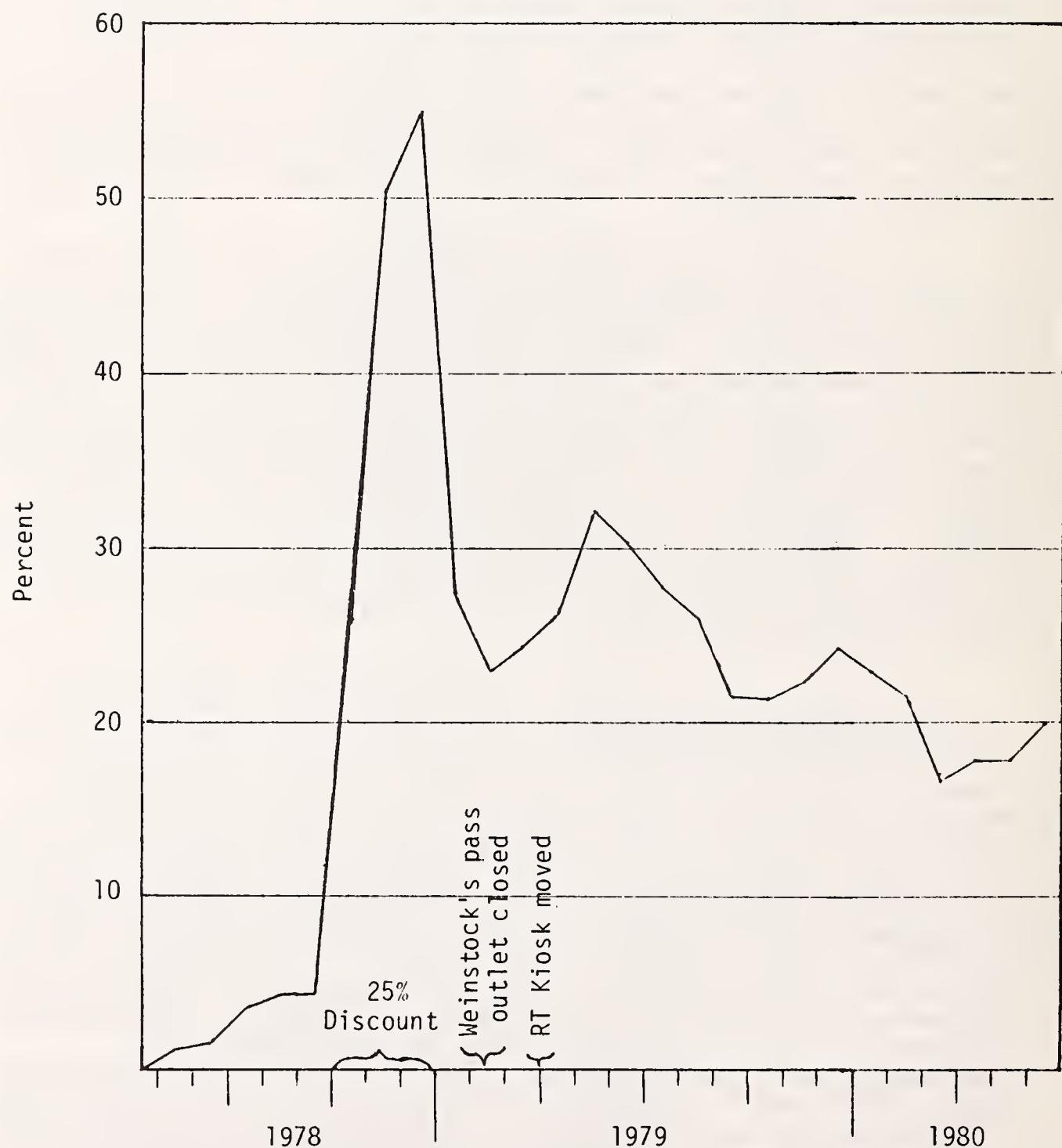


EXHIBIT 5.5

EMPLOYER PASS SALES INCREASE IN OCTOBER-DECEMBER 1978DURING THE \$3 (25%) DISCOUNT

<u>Population</u>	<u>September Pass Sales</u>	% Increase in Pass Sales from September		
		<u>October</u>	<u>November</u>	<u>December</u>
17 Employers	177	92	176	175
16 Employers (excluding CAGE)	167	98	185	187
15 Employers (exclud- ing SMUD, CAGE)	111	129	259	268
SMUD (\$6 employer subsidy at all times)	56	34	41	25
CAGE (\$5 employer subsidy in September, \$2 employer subsidy in October)	10	0	10	-20
<hr/>				
1977 total RT pass sales (control group for seasonal variation)	3142	18	23	3
1976 total RT pass sales (control group for seasonal variation)	2200	26	33	9

the discount.

Post-Discount Period

In January 1979, following the discount period, employer pass sales dropped abruptly by 55% from December (50% excluding the two firms that dropped out of the program that month). Pass sales then remained relatively stationary (excluding May, when there was an RT labor strike) until September, when a fare increase further discounted the pass price over cash payment for the daily rider. From January to August (excluding May), employer pass sales averaged 1192 passes, or 26.4% of all RT passes sold. During this time, seven employers joined the program and six employers dropped out.

Even though most participating employers considered the administrative costs of selling passes to be low, several of those who dropped out of the demonstration after the discount said that the cost to the employer outweighed the minor convenience to employees (given the existence of nearby public outlets). For example, an employer located one block from a public outlet sold an average of twenty passes per month during the discount period, but none during the two months following the discount period when passes were sold at the regular public price. This result strongly suggests that the added convenience of employer-based sales was perceived as nil by employees of that firm, particularly since they were required to give the employer considerable advance notice of their intention to buy a pass (called the "subscription plan" for pass purchase).

The regular RT cash fare increased by 43% to \$0.50 in September, while the pass price rose by only 25% to \$16. The lower percentage increase for the monthly passes had the effect of lowering the "break even" number of bus trips using the pass from 34.29 to 32 per month, a 7% decrease. In other words, at the new prices, the cost of a monthly pass was 32 times the cost of a single fare ($32 \times \$0.50 = \16.00) instead of 34.29 times the price of a single fare formerly ($34.29 \times \$0.35 = \12.00). Employer pass sales increased in response, rising to 1321 passes in October, and 1415 in November. However, the October figure represented only 21.4% of all passes sold, the lowest level since before the discount period, because sales at public outlets rose at a greater rate than employer-based sales.

As can be deduced from the generally downward trend in the percentage of total monthly passes sold by employers (see Exhibit 5.4), a higher growth rate in pass sales at public outlets than sales through employers was observed in the post-discount period. Over a period of one year, comparing the sales during the first quarter of 1980 with those

of the first quarter of 1979, the rate of growth of public outlet sales was about double that of employer sales--39.4% to 20.3%. Part of the differential in growth rates may be accounted for by the shift back to purchase of passes at public outlets by employees who switched during the discount from pass purchase at public outlets to purchase through their employer. Another share of the differential may have been due to the restricted population represented by employees, who are concentrated in the 18-65 age group. Public outlets have a chance to serve additional segments of the population, e.g., students, that may be significant purchasers of monthly passes. A third possible but unconfirmed contributor to the observed growth differential may have been a more rapid growth in employment among Sacramento firms not participating in the demonstration (their employees would have had to use public outlets for pass purchase) than in those firms participating in the employer pass program. It is not known, however, if the reasons just cited can account for employer sales growing at half the percentage rate of public outlet sales, or whether it must further be assumed that some fraction of employees eligible to buy passes through their employer have an inherent preference for purchasing passes at a public outlet.

Variation by Employer

Considerable variation in pass sales among employers existed. Three participating employers sold no passes, although one of these, a social service agency, sold numerous \$3 stickers that are used as passes by the elderly (see section 3.2.3). The largest pass sales were by the California Employment Development Department in October 1978, when they sold 525 passes to their 3200 employees. Other than size, the major predictor of pass sales volume was location; those firms with good transit service sold more passes than those with poor service. Using the three categories of transit service developed in section 4.3.3, 13.7% of eligible CBD employees bought passes at work in December 1978, the last month of the discount. At firms having "fair" transit coverage, only 3.8% bought passes, and 0.9% bought passes at firms with "poor" transit coverage. In January 1979, the first month after the discount, these percentages dropped to 6.9%, 2.5%, and 0.4%.

Another important variable in determining sales was the method used by the employer to sell passes. The few employers who required payroll deduction had markedly lower pass sale rates than those selling over-the-counter. For example, three CBD employers sold passes only by payroll deduction. During December 1978 (the last month of the discount), only 2.3% of their 3850 employees bought passes at work, compared to 15.3% at the 31 CBD employers selling passes over-the-counter or by subscription. The following

month, the respective proportion was 2.1% and 8.5%. Thus, there appeared to be a strong user preference for buying passes over-the-counter rather than by payroll deduction. This result may have been due in part to the fact that the use of payroll deduction is viewed by the employee as a longer term commitment than he or she explicitly wants to make.

At the firms that sold passes by subscription, pass sales were similar to those of over-the-counter firms. This suggests that a factor deterring pass purchase through payroll deduction may not be the advance notice required, which is similar to that required for subscription, but rather may be the steps required and time delay involved in getting the payroll deduction stopped when a pass is no longer wanted.

The distance of an employer to a regular public outlet had little apparent effect on overall pass sales, perhaps because the majority of participating employers were located within walking distance of a pass sales outlet. The influence of employee characteristics on the purchase of passes is considered in the discussion of the three employee surveys (Sections 5.2 through 5.4).

5.1.3 Total RT Pass Sales

As shown in Exhibits 5.1, and 5.2, and 5.3 introduced earlier, total RT pass sales had been rising steadily before the demonstration at about a 30% annual rate. The demonstration program resulted in further increases in total RT pass sales, especially during the months when employer-sold passes were discounted. Exhibit 5.2 plots a trend line (obtained by least-squares linear regression) for the percentage increases in pass sales from September 1977 through September 1978, and extrapolates this trend through the remainder of 1978 and to August 1979. As can be seen in the illustration, from October 1978 onward the actual percentage increases in pass sales were consistently above the extrapolation, except for April through June 1979, when the RT strike disrupted transit usage.

The strike presented a truly unfortunate interruption in pass sales, because, given the month-to-month decline toward the extrapolated line from January to March, an unperturbed process would have shown whether a complete return to the trend existing before the discount period had occurred. Exhibit 5.6 summarizes the data and quantitative analysis concerning the changes in total RT pass sales from October 1978 through March 1979.

EXHIBIT 5.6

ESTIMATED INCREASE IN PASS SALES DUE TO 25% DISCOUNT

IN THE LAST QUARTER OF 1978

Month	Total Number of Monthly Passes Sold	Range in Estimates of additional Passes sold as a result of 25% Discount ¹	Middle of Range in estimates of additional passes sold as a result of 25% Discount	Excess Percentage increase over Projected Percentage Increase in Passes sold ²	Percentage Increase in Pass Sales over Projected levels of Pass Sales ³
			+394 to + 541	+468	+11.3%
October 1978	5098	+915 to + 1103	+1009	+25.1	+21.0
November 1978	5812	+895 to + 994	+944	+30.7	+23.0
December 1978	5044	+309 to + 407	+358	+11.9	+8.3
January 1979	4664	+40 to + 230	+135	+4.6	+2.8
February 1979	4947	-144 to + 209	+33	+1.1	+0.6
March 1979	5443				

Column 1

Column 3

1. Four different projections were made using data on pass sales from October 1976 through September 1978:
 - a. Projection based on month-to-month changes in pass sales (first differences), averaging comparable month-to-month changes for two years
 - b. Projection based on month-to-month changes in pass sales (first differences), using only values for latest preceding year
 - c. Projection based on flat 27 percent growth over previous year
 - d. Projection based on trend line of percentage growth over previous year (see Exhibit 5.2)

2. Using Exhibit 5.2, the difference between the observed and the projected percentage increase in pass sales for the month compared to the sales in the same month one year earlier

3. The percentage shown is calculated as follows:

$$\left[\frac{\text{Column 1}}{\text{Column 1}} - \frac{\text{Column 3}}{\text{Column 3}} - 1 \right] \times 100\%$$

The data after March 1979 are not included in this analysis because of the effects of the transit strike, the gasoline shortage, and the fare increase. Although the RT strike did not begin until April 26, April pass sales were low because the previous labor contracts expired on March 31 and an April 1 strike was anticipated. Also, the RT Kiosk, the major public pass sales outlet, closed in March, and this also depressed April sales (see Sections 3.3.2 and 3.3.5). June pass sales were expectedly low, since the strike had only ended a week and one-half earlier, and some commuters who used alternative travel modes during the strike did not immediately return to using transit. The data for July and August 1979 are not considered reliable for purposes of assessing the effects of the October-December 1978 pass discount because of their probable tainting by the effects of the gas shortage in May 1979 and its sequelae. From September 1979 onward, pass sales were additionally influenced by RT's fare increase, which effectively gave the monthly pass an additional 7% discount in terms of its "break even" point relative to paying individual regular fares.

The pass sales increases were greatest during the three-month discount period. According to the rightmost column of Exhibit 5.6, November and December pass sales were 21% and 23% higher than the levels projected. In the first three months after the discount, the increases were more modest and showed a steady decline. January's pass sales were 8.3% higher than those projected, while the February and March increases were estimated at 2.8% and 0.6%, respectively. The average increase during the first three months after the discount was 3.9%.

The November and December increases in pass sales are significantly higher than the projected increases at a level of significance better than .01. Using a one-tailed test, since the discount was expected to produce an increase in pass sales if it had any effect, the October 1978 and January 1979 increases in pass sales can be considered to be significant at the .10 (ten percent) level. Neither February's nor March's pass sales can be considered to be significantly above projected values. Thus, the effect of the discount in raising total RT pass sales seems to have almost disappeared three months after the end of the discount.

After the September 1, 1979 fare increase, pass sales increased markedly. Although the extrapolation in Exhibit 5.2 has not been carried through beyond August because of the exogenous events of the gasoline shortage and gasoline price increases, and the fare increase, the percentage increases in pass sales over the levels of the previous year in September through December were between 18% to 14% more than the percentage increases that might have been projected

by the trend extrapolation. An increase of this magnitude was somewhat foreseeable in light of the following results derived from the three employee surveys:

(1) 16% of all bus-using employees were 4-day-a-week bus commuters, of whom only about one-third used a monthly pass before the fare increase; thus, after the fare increase, 10% to 11% of all bus users (two-thirds of the four-day-a-week bus riders) would be more strongly attracted to a monthly pass having essentially a 4-day-a-week (32-trips-a-month) break-even frequency.

(2) Approximately half of the five-day-a-week bus riders did not use the monthly pass before the fare hike; these regular transit users would be expected to shift to greater use of the monthly pass as its relative economy compared to the daily pass or the single fare became greater.

Another sharp increase in pass sales occurred in March 1980 as a side effect of the employer pass program. As a result of RT's marketing efforts and continuing contact with one of the employers participating in the "Monthly PASSpoRT" program, namely, the County of Sacramento, the County's Welfare Department became RT's largest single buyer of monthly passes. Starting with passes for March 1980, the Welfare department began buying between 2,400 and 3,000 passes per month for distribution to recipients of general assistance aid.¹ This volume of passes was about fifty percent more than the total volume of passes sold to employees by the more than fifty employers in the "Monthly PASSpoRT" program, and therefore the Welfare Department's purchase of passes greatly reduced the overall cost per pass sold of administering the pass program.

5.2 EMPLOYEE SURVEYS

The analyses and results discussed in the remainder of this chapter are based on data collected from three employee surveys conducted at firms participating in the demonstration. The first survey was conducted before an employer began to sell passes (survey carried out between April and September 1978); the second during the discount period (survey in late November and early December 1978); and the third after the discount period (survey taken between August and

¹ The Welfare Department charged the \$16 cost of the pass to each recipient's "debt account," since the County of Sacramento requires gradual repayment of aid amounts if and when a recipient of general assistance aid becomes employed.

October 1979). Thus, the surveys were conducted during three (pre-implementation, discount, and post-discount) of the four logical phases of the demonstration. The only phase not covered is the pre-discount phase, the period after pass sales began at the firm but before the discount began (in October 1978). To detect travel behavior changes during this period, the version of the discount-period survey delivered to employers who started pass sales during May-September 1978 asked about the employee's commuting pattern during the previous months.

Except in the cases of two large employers, the first and last surveys were distributed to all employees of each participating firm (a random sample of 2,000 employees was selected at each of the two firms with substantially more than 2,000 employees). The discount-period survey was distributed only to those persons buying discounted December 1978 monthly passes. It had a much higher response rate (64%) than the other two surveys (24% and 21%), mainly because the distribution and collection of surveys was better controlled, and possibly because the group of pass buyers may have been more inclined than the general population of employees to complete a survey sponsored by the local transit system. Such a response bias, that is, a proportionally greater return of surveys by persons who use transit than by those who do not, may have distorted the results of the first and last surveys as well; some results have had to be interpreted accordingly.

The first survey was given to employees of the first 35 employers to participate in the transit fare prepayment demonstration, those starting pass sales in May through October 1978. An additional 18 firms started pass sales in November, but they were not included in the first survey because the original demonstration plan was to have only 30 employers participate in the program. As it was, 21,482 questionnaires were distributed and 5,136 were returned, for a 23.9% response rate. This first survey was conducted over a period of six months as the 35 employers joined the program.

The second survey was conducted in late November and early December 1978, when employees purchased their December passes. Because only a small proportion of all employees bought passes, pass purchasers from all 51 participating firms (two firms had dropped out by this time) were surveyed. Altogether, 1,795 surveys were returned, for a 64.1% response rate.

The third survey was originally scheduled for April 1979, but was rescheduled for September 1979 because of the RT strike. After the proposed fare increase was announced, the survey was moved up to late August. In fact, many employees did not complete the survey until after the fare

increase took effect, but employees were asked to write down the date they completed the survey. In this way, the effect of the fare increase could be isolated.

The third survey was distributed to firms that received the first survey. Four of these firms had dropped out of the program by this time, and another three refused to distribute the surveys. Consequently, employees at only 28 firms were surveyed; 4,556 of the 22,130 surveys distributed were returned, resulting in a 20.6% response rate. The slightly lower response to this survey compared to that of the first survey possibly reflects the second's increased length.

The original survey analysis plan was to measure behavior changes by comparing individual responses to the different surveys. For this reason, individual survey responses were matched according to an employer code, the respondent's reported birthdate, and the respondent's zip code. After the first and second survey responses were matched, however, two major problems were encountered. First, the sample sizes for analysis were substantially reduced when unmatched responses were eliminated. Second, because of the first survey's probable response bias, the matched responses had more former transit users compared to new transit users than actually existed; this resulted in a misleading estimate of the number of new transit users attracted by the discount. To solve this problem, the third survey -- though also matched with responses from the first two surveys -- contained questions on previous travel behavior; this allowed travel behavior changes to be analyzed without depending on the matching process.

Copies of the survey forms and tabulations of the survey results are contained in Appendices C through E. The following sections summarize these results.

5.3 PRE-DEMONSTRATION EMPLOYEE CHARACTERISTICS AND BEHAVIOR (FIRST SURVEY)

The first survey documented employee characteristics and travel behavior prior to their firm's participation in the pass sales demonstration. Despite a probable respondent bias favoring transit users over non-users, the results indicate that the overall employee population was relatively affluent and not transit-dependent (see Appendix C, First Employee Survey).

5.3.1 Demographic Characteristics

Although only 16 of the 35 firms surveyed were government agencies, 72% of the respondents were government workers because the participating government agencies were larger than the participating private firms. This proportion was actually less than for the full participating employee population, because only sample populations were surveyed at the two largest government employees, and 14 of the 18 firms joining the program in November 1978, after the first survey, were government agencies. Among all 52 firms participating during that month, 83% of the employees worked for government organizations (see Section 4.3.1).

The survey was taken in 1978, when the median family income was about \$17,200 nationally, but 56% of the respondents reported household incomes of over \$20,000. Over one-third of the employees responding to the survey reported household incomes of over \$25,000. Automobile ownership was also far above average; only 2% of the respondents lived in households without an automobile (compared to the U.S. average in 1970 of 18.6%), while two-thirds lived in households with two or more automobiles (U.S. average in 1970 was 30%). The majority of the respondents had at least one other worker in their household but, even so, in 85% of the cases there was at least one automobile for every worker.

5.3.2 Travel Behavior and Pass Usage

Considering the high availability of automobiles, the use of bus transit for commuting was relatively high, claiming 17.9% of all commuting trips (compared to a U.S. national average in 1970 of 7.8%). Only 12.3% of the employees responding to the survey stated that they rode the bus to work every day; an additional 10.2% took the bus one to four days each week. Of all the employees responding to the survey, only 11% reported riding the bus for any non-work trips during an average week.

Among the approximately 28% of the survey respondents who reported riding the bus at least occasionally for any purpose, about one-third said they used monthly passes. These pass users represent 9% of the total employee sample, which is less than the tabulated percentage (12.3%) of daily bus riders. Thus, a sizable number of riders who used transit daily were not purchasing passes.

Nine percent of the cash-paying users said they did not buy passes because they were inconvenient to buy; six percent were either unaware of the monthly pass or did not know where to purchase them. The demonstration program directly

addressed the obstacles that these groups cited, and thus the 15% of employees who already were using bus transit for commuting but were not buying passes were a major target market of the demonstration. For the 11% of respondents who cited the large cash outlay and the 3% who mentioned their fear of losing the pass as their reasons for not purchasing passes, the demonstration could offer little to overcome their reluctance to become pass users.

At the time of the first survey, the ten percent of respondents who were less than five-day-a-week users did not have an economic incentive to buy a monthly pass unless they also used the bus for non-work trips. Although the discount on monthly passes to be offered as part of the demonstration would undoubtedly attract some of these riders, they would probably not continue buying passes after the discount period unless they increased their bus usage.

5.3.3 Attributes Affecting Transit Usage

The results of the first employee survey showed that, of employees responding, nearly eighteen percent of all work trips were made using bus transit (transit mode share of 17.9%). An examination of specific employee characteristics revealed that several factors influenced the likelihood that an individual would use transit. The most significant of these was the location of the workplace. The bus mode share of employees working in the CBD, where bus service is good, was 29%; it fell to 7.6% for those employees working at firms with fair transit service (several bus routes), and was only 2.4% at firms with poor transit service (only one or two routes).

A random sample survey of 915 State employees taken in Sacramento in June 1979 by the California Department of General Services (CDGS) provided a check on the CBD transit mode share result obtained from the demonstration's first employee survey. The CDGS survey,² which achieved a 96.7% response rate through follow-up telephoning, found that the transit mode share for CBD employees was 27.5%, slightly less than the 29% for all CBD employees and 30.5% for State CBD employees disclosed by the demonstration survey. The lower transit mode share of the CDGS survey may reflect an effect of the SRTD strike during the month before the survey was taken, although there was apparently some growth in transit usage between 1978 and 1979 that could have offset

² California Department of General Services, Office of Facilities Planning and Development, California State Employee Characteristics, September 1979.

the effect of the strike. On the other hand, the results of the SRTD demonstration survey may tend to be slightly higher than the true transit mode share, due to a bias in receiving a proportionately greater return of questionnaires from transit users. All things considered, the results of the independent CDGS survey confirm that the demonstration survey was representative with respect to the transit mode share of employees who work in the CBD.

In addition to workplace location, certain other employee characteristics (e.g., not having a driver's license, no motor vehicle in household, must work on Sunday) stand out as important correlates of higher-than-average or lower-than-average transit usage. However, for each of these "predictor" characteristics, only a small percentage of workers (10% or less) is involved, so the transit usage variables associated with these predictor characteristics are not particularly useful in explaining what caused most people to use or not use transit. For example, as shown in Exhibit 5.7, transit use was very high (48% mode share) among persons without driver's licenses, but only 4% of the respondents were in this category. Likewise, some clearly defined but small groups were unlikely to use transit, including those who had to work on Saturday or Sunday and those needing their cars at work at least occasionally. Only about 5% of each of these employee groups used transit to commute.

Unlike the dichotomous factors mentioned above, which split the population under study into a minority and majority group (e.g., the few who work on Saturday and the many who do not, or the few who do not have driver's licenses and the many who do), some characteristics do serve as true variables that depict clear transit usage patterns as their values range to cover the entire population under study. Although "no autos in household" was shown in Exhibit 5.7 as a characteristic associated with a high transit mode share, "no autos in household" is just one value of the variable "number of cars in household." Two other variables to be discussed below are the perceived level-of-service ratio³ and the number of transfers required to accomplish the desired trip by bus.

Exhibit 5.8 shows how, controlling for workplace location, transit mode share varied as a function of the number of cars in a household and whether one left work between 4:00 and 6:00 P.M. or not. For those people within a given time-of-departure group, workplace location had a greater effect than number of cars in household (considering only households with at least one car, since insufficient data on

³ Level-of-service ratio = bus travel time/auto travel time.

EXHIBIT 5.7

CHARACTERISTICS STRONGLY ASSOCIATED WITH USE OR NON-USE OF TRANSIT
BUT WHICH APPLY ONLY TO A SMALL FRACTION OF EMPLOYEES

<u>HIGH TRANSIT USAGE</u>		<u>LOW TRANSIT USAGE</u>	
Percent of Employees With Indicated Characteristic	Characteristics Very Positively* Associated With Use of Transit	Percent of Employees With Indicated Characteristic	Characteristics Very Negatively* Associated With Use of Transit
2%	No autos in household	60%	8%
4%	No driver's license	48%	4%
8%	Member of household with more than one worker per auto in the household	31%	10%
		23%	Work ends outside hours of 4PM - 6PM
		8%	Work begins outside hours of 7AM - 9AM
			4% 5% 5% 5% 8%

* Ten or more percentage points different from overall transit mode share of approximately 18%

EXHIBIT 5.8

PERCENTAGE OF EMPLOYEES COMMUTING BY TRANSIT
AT LEAST FOUR DAYS PER WEEK

Downtown Employees With Good
Transit Service (n=2065)

	<u>Number of Cars in Household</u>				Combined
	0	1	2	3+	
Leave work 4-6 PM	71.4	35.8	29.1	22.0	30.9
Leave work other times	*	26.7	8.0	11.1	15.6
Combined	66.0	35.0	27.4	21.2	29.7

Employees at Workplaces With
Fair Transit Service (n=801)

	<u>Number of Cars in Household</u>				Combined
	0	1	2	3+	
Leave work 4-6 PM	*	14.2	5.2	0.9	7.9
Leave work other times	*	11.7	4.0	0.0	7.9
Combined	*	13.2	4.8	0.6	7.9

Employees at Workplaces With
Poor Transit Service (n=935)

	<u>Number of Cars in Household</u>				Combined
	0	1	2	3+	
Leave work 4-6 PM	*	3.8	1.4	2.2	2.9
Leave work other times	*	2.4	1.6	1.0	1.8
Combined	*	3.1	1.5	1.5	2.4

*Less than 20 employees in this group

households without a car was available for two of the three workplaces). Still, it can be seen that the number of cars in a household and the time-of-departure group are important determinants of the transit mode share.

The ratio of household workers to cars also has an independent effect, but it was omitted from Exhibit 5.8 because many of the subpopulations become too small for meaningful analysis when they are divided by a fourth variable. However, the effect on transit mode share of the relative magnitudes of the number of workers and the number of cars in a household has been explored for the largest subpopulation, namely, downtown employees leaving work between 4 PM and 6 PM. Exhibit 5.9 illustrates the transit mode share as a function of the number of cars in a household for two cases of the relationship between the number of workers and the number of cars in a household: the case of more workers than cars, and the case where the number of cars is equal to or greater than the number of workers. It can clearly be seen that the transit mode share decreases as the number of automobiles in the household increases in both cases, and that it is higher for the case of more workers than cars than for the other case at all values of the number of household vehicles.

The first survey asked employees to estimate how long it took for them to reach their workplace by both bus and automobile, and how many bus transfers were required for the trip. On the average, the bus was perceived to take over twice as long. More significantly, however, bus usage was strongly related to these perceptions, as shown in Exhibit 5.10. Of course, the perceived level-of-service ratio was primarily a function of the workplace location; downtown employees with good bus availability had a mean perceived level-of-service ratio of 2.0; those in areas with fair transit service had a mean of 2.9, and poorly served employees had a mean of 3.6. Having to transfer also discouraged transit use, but the number of transfers and the level-of-service ratio were closely related. Even so, as can be seen in Exhibit 5.11, among persons with the same overall travel-time ratios, persons having to transfer were somewhat less likely to ride the bus.

5.3.4 Attributes Affecting Monthly Pass Usage

If an employee does ride the bus, the decision of whether or not to use the monthly pass depends primarily on how often he or she rides the bus (see Exhibit 5.12). As cited in Section 5.3.2, most employees who did not use the monthly pass said it was because they did not ride often enough. Even among daily (five days/week) commuters, how-

EXHIBIT 5.9

TRANSIT MODE SHARE AS A FUNCTION OF THE NUMBER OF CARS IN A HOUSEHOLD

Percentages of Employees Commuting by Transit
at Least Four Days per Week

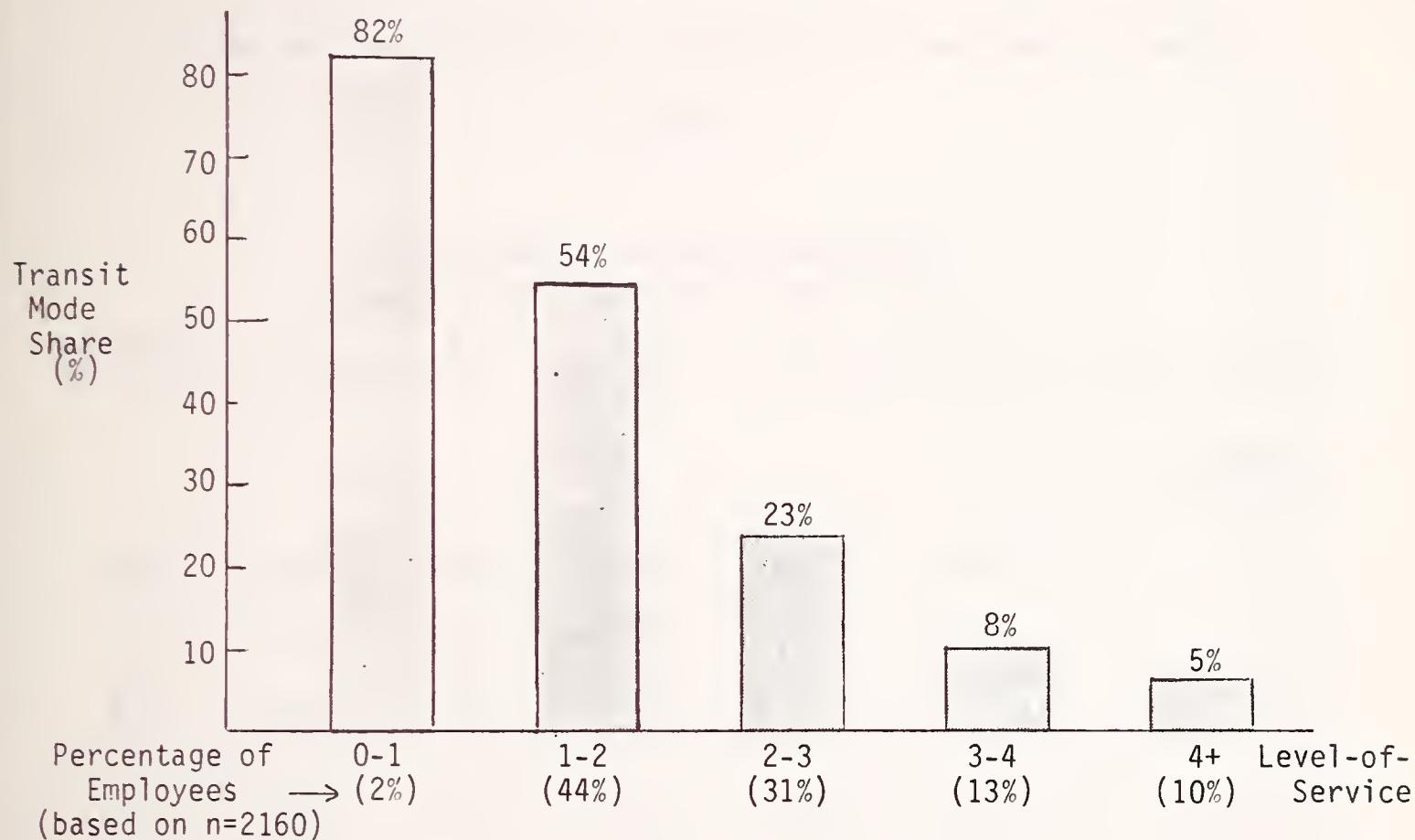
(downtown employees leaving work from 4 to 6 PM; n=1807)

	Number of Cars in Household				
	0	1	2	3+	Combined
More workers than cars	71.1	41.9	39.1	26.9	43.6
Equal or more cars than workers	--	33.3	28.7	21.4	28.3
Combined	71.1	35.9	29.5	21.8	30.9

TRANSIT MODE SHARE VERSUS LEVEL OF SERVICE AND NUMBER OF TRANSFERS

(Employees using transit 4 or more days per week)

Transit Mode Share as a Function of
Perceived Level-of-Service Ratio
(Bus Travel Time/Auto Travel Time)



Transit Mode Share as a Function of
Number of Transfers Required

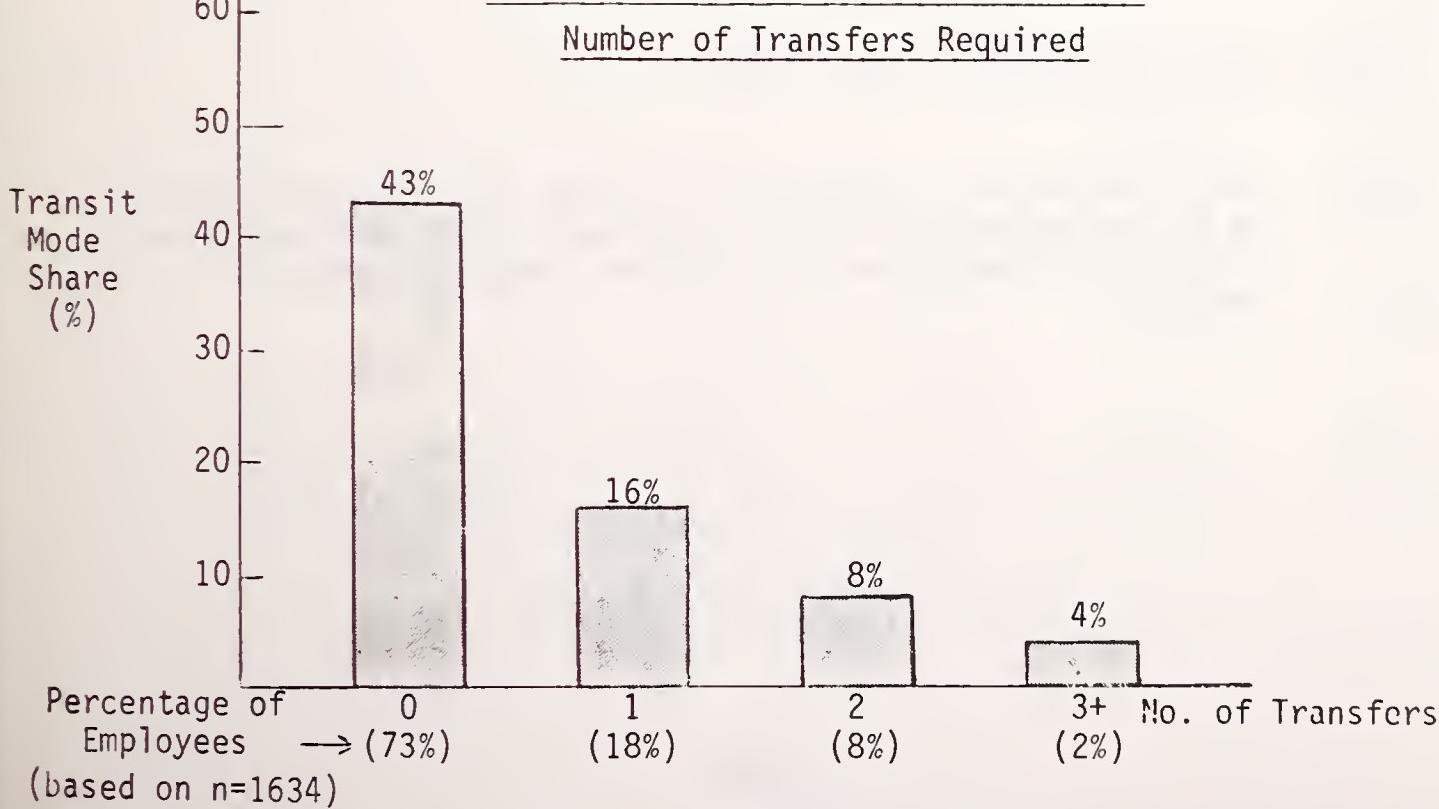


EXHIBIT 5.11

EFFECT OF HAVING TO TRANSFER ON TRANSIT MODE SHARE

Percent of Employees Using Transit at Least Four Days Per Week

(n = 1434)

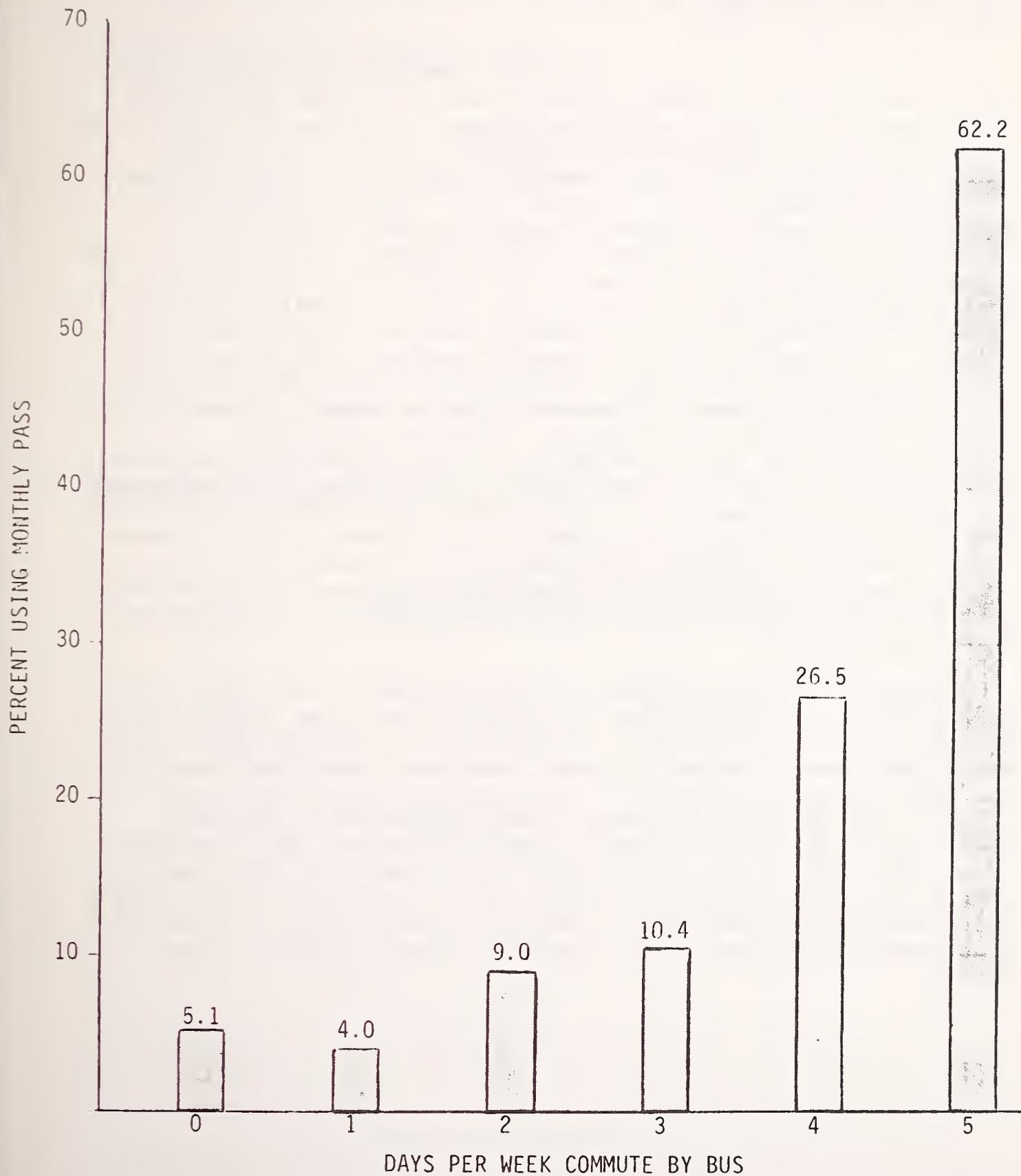
Perceived Level-of-Service Ratio
(Bus Travel Time/Auto Travel Time)

	0-1	1-2	2-3	3-4	4+	Combined
Number of Transfers:						
0	82.8	57.4	28.7	13.4	5.9	43.1
1	*	50.0	24.6	4.5	4.9	17.9
2+	*	*	12.9	5.3	6.5	8.8
Combined	82.4	56.4	27.0	9.2	5.7	36.1

* Fewer than 20 employees in this group.

NOTE: Total mode share is substantially higher than that reported for the entire employee sample, because bus riders were more likely to have known bus travel time and the number of required transfers.

EXHIBIT 5.12

MONTHLY PASS USAGE AS A FUNCTION OF FREQUENCY OF BUS USE

ever, over one-third did not use the pass. Almost half still cited not riding enough, referring to days in which they did not ride the bus due to vacation, illness, travel, or unexpected need of their automobiles. The other major reasons mentioned were a dislike of paying for the entire month's bus usage all at once (23%) and the inconvenience of buying the pass (20%).

In addition to the employees' commuting patterns, bus use other than for commuting also influenced an employee's fare payment choice. Of the employees who commuted daily by bus and also rode the bus at least once weekly for other trips, 74% bought passes, compared to 57% for those not making non-work bus trips. In addition, two demographic characteristics (household income and sex) were found to be related to pass use. Lower-income workers and women -- and especially the group of lower-income women -- used passes more frequently than others; Exhibit 5.13 illustrates this trend among employees who already commuted by bus five days a week. For employees who make no non-work bus trips, the observed difference in pass use between males and females is significant for those in households with annual income over \$20,000 ($\alpha=.01$) and over all household incomes ($\alpha=.001$), but is not significant for those with incomes under \$20,000. On the other hand, considering the employees who make some non-work bus trips, only for incomes under \$20,000 is the difference significant ($\alpha=.05$); the numbers of male and female respondents from households with incomes over \$20,000 are too low for the observed difference (showing men to be more frequent pass users) to be considered significant.

Since the monthly pass is transferable, this may be an incentive for its purchase. The first employee survey did not inquire about the use of the pass by persons other than the buyer, but a series of such questions were included in the third employee survey. The results showed that only 8.7% of the passes sold were reportedly used by persons other than the buyer, usually family members. Most of the time, only one or two additional trips per week were made; these trips by other users comprised only 2.2% of all trips made with monthly passes. Thus, the transferability of the pass does not appear to be a major incentive for its purchase.

EXHIBIT 5. 13

PERCENTAGES OF DAILY BUS COMMUTERS USING THE MONTHLY PASSEmployee Makes No Non-Work Bus Trips

Sex	<u>Annual Household Income</u>		Total
	Under \$20,000	Over \$20,000	
Male	55.8 (n=43)	44.0 (n=125)	47.0 (n=168)
Female	67.7 (n=102)	63.8 (n=69)	66.1 (n=171)
Total	64.1 (n=145)	51.0 (n=194)	56.6 (n=339)

Employee Makes Some Non-Work Bus Trips

Sex	<u>Annual Household Income</u>		Total
	Under \$20,000	Over \$20,000	
Male	62.5 (n=24)	82.1 (n=39)	74.6 (n=63)
Female	81.5 (n=92)	65.2 (n=23)	78.3 (n=115)
Total	77.6 (n=116)	75.8 (n=62)	77.0 (n=178)

5.4 DISCOUNT PERIOD TRAVEL IMPACTS (SECOND SURVEY)

5.4.1 New Transit Users

The second employee survey (see Appendix D) was given to all who purchased a December 1978 pass from their employer. As discussed in Section 5.2, the survey analysis plan called for the matching of individual responses to the different surveys in order to detect modal shifts over time. Between the first and second surveys, 277 surveys were matched (although not all 277 contained usable responses for all questions), or 29% of the second survey responses from employers surveyed both times. (Since all employees, not just pass purchasers, were questioned in the first survey, only a fraction of the first survey responses could be matched.) The results of all second-survey responses are shown in Appendix D.1. Appendix D.2 presents the travel behavior results of the first and second surveys for the matched-response group.

According to the sample of matched responses ($n=276$), approximately 8% of the pass purchasers were new bus riders; nearly 85% had used the bus for commuting four or five days per week before the demonstration program began. There is reliable evidence derived from the survey itself, however, that the results of the matched responses substantially underestimate the actual number of new users.

The survey forms distributed to the 17 employers who began pass sales before the October-December discount period in 1978 included a question (#3a) on commute modes before October in order to identify any behavioral change between the beginning of pass sales and the discount period. (This question did not appear on the survey forms delivered to the remaining firms that began pass sales during the discount period.) The question on previous commuting behavior, whose results are summarized in the top portion of Exhibit 5.14, served to check the accuracy of the results of the matched responses. The percentage increase shown for the matched responses is substantially lower than that for the unmatched responses. The difference between the matched responses and the unmatched responses is due to the former's having a higher percentage of bus users before the discount than the latter. The probable reason for the difference is a response bias caused by proportionately more transit users responding to the first survey than non-users of transit (the first survey was sent out with a cover letter from the Transit District). Estimation of the response bias is explained at the end of Appendix D.2.

The lower portion of Exhibit 5.14 shows the bus mode share for those respondents whose first and second surveys could be matched ($n=276$). As in the case of the percent of

EXHIBIT 5.14

COMPARISON OF MATCHED AND UNMATCHED RESPONSES CONCERNING BUS USEBEFORE AND DURING THE DISCOUNT PERIOD

(Results of Second Employee Survey
 Given to Purchasers of December 1978 Passes)

Percent of Respondents Using Bus
for Commuting at Least One Day a Week

	Before Discount Period (Before October 1978)	During Discount Period (December 1978)	Change
Employers 1-17*			
Matched responses (n=80)	86.3	95.0	+8.7
Unmatched responses (n=247)	74.5	95.1	+20.6
Total responses (n=327)	77.1	95.1	+18.0
Employers 1-52 (n=1785)	--	96.8	--

Bus Mode Share (Percent of Trips)

	Before Discount Period	During Discount Period	Change
Employers 1-34			
Matched responses (n=276)	86.3	93.4	+7.1
Employers 1-52 (n=1785)	--	92.1	--

*Two questionnaires were used in the second employee survey. Only the employees of Employers 1-17 received the version that asked about travel behavior before the discount: "How did you travel to work before October 1978 (before the \$3 bus pass discount began)?" (Question 3a). For employees in Firms 18-34, previous behavior could only be detected by matched responses in the first and second employee survey. Employers 35-52 joined the program after the first survey was completed, so no information on the previous travel behavior of their employees is available.

respondents using transit for commuting at least one day a week (upper portion of exhibit), one suspects that the matched responses understate the increase in transit mode share between the "before discount" and "during discount" periods. Adjusting for the presumed response bias (see Appendix D.2, "Estimation of Response Bias", pp D-16 and D-17), it seems clear that the increase in bus mode share is between 15% and 20%, more than twice the 7.1% increase derived from the matched responses alone.

The analysis of the results of the second employee survey suggests that at least 15% of discount-period pass purchasers were new transit riders. This level of attraction of new riders to transit is corroborated by the results of the third employee survey (distributed in August-October 1979), which inquired about past travel behavior. Among employees who were working at the same location since early 1978 (before the pass program began) and who bought a monthly pass during the discount period, 24.5% reported that they used mainly non-bus modes for commuting before May 1978. Some people in this group undoubtedly rode the bus occasionally for work trips (the question asked if one was a regular bus user or not), so strictly speaking were not totally new transit riders. Furthermore, the third survey (and also the previous two) indicates that about 10% of pass buyers did not use the bus as their principal commuting mode, despite having bought a pass.⁴ Therefore, one expects that at least 2.5% and conceivably up to 10% of the 24.5% mentioned above could not be considered new transit riders. The net result of these considerations supports the conclusion that from 15% to 20% of discount-period pass purchasers were new bus riders.

The matched responses to the first and second surveys for employees of firms where passes were sold before October 1978 provide an indication of the greater importance to the potential pass buyer in Sacramento of cost savings as compared to the convenience of employer-based pass sales and the knowledge of transit gained through employer promotion. Exhibit 5.15 displays the percent of employees using the bus at least one day a week and the bus mode share for three time periods: 1) before the employer started selling passes (Before Project), 2) before the discount in October-December 1978 but after the employer had begun selling passes (Before Discount), and 3) in December 1978 (During Discount). The changes in percentages between the "Before Project" and "Before Discount" periods may be presumed to reflect the effect on employee transit use of the added convenience of

⁴ For example, two percent of the respondents to the second survey stated that they bought the discounted pass for someone else.

EXHIBIT 5.15

COMPARISON OF CONVENIENCE AND KNOWLEDGE EFFECTS WITH PRICE EFFECTS
 (Results of Second Employee Survey)

Percent of persons using the bus at least one day a week before project, before 25% discount, and during discount. (Employers where passes were sold before October 1978; n = 80)

<u>BEFORE PROJECT</u>	<u>BEFORE DISCOUNT</u>	<u>DURING DISCOUNT</u>
83.5%	86.3%	95.0%
$\Delta = +2.8\%$ Convenience and knowledge effects	$\Delta = +8.7\%$ Price effect <u>already given</u> convenience and knowledge factors	

Mode shares before project, before 25% discount, and during discount (unweighted by number of days each mode used; weighted data unavailable). (Employers where passes were sold before October 1978; n = 80)

<u>BEFORE PROJECT</u>	<u>BEFORE DISCOUNT</u>	<u>DURING DISCOUNT</u>
71.0%	71.1%	80.0%
$\Delta = +0.1\%$ Convenience and knowledge effects	$\Delta = +8.9\%$ Price effect <u>already given</u> convenience and knowledge factors	

employer-based pass sales and the added knowledge of transit due to employer promotion of the Monthly PASSport program. The changes in percentages between the "Before Discount" and "During Discount" periods should reflect principally the effect of the lower price of the pass (\$3 reduction on the \$12 regular price) available to employees. Although the sample size is small ($n=80$), the results do suggest that the discount had at least three times the power to attract new transit users as convenience of pass purchase and knowledge of transit programs even after the factors of convenience and knowledge had been introduced into the situation. For the particular group of 80 employees included in the matched responses, almost all the increase in mode share from the "Before Project" period appears to be attributable to the discount (price effect). It should be recalled, however, that in Sacramento passes were convenient to obtain in public outlets prior to and during the demonstration and that the general population had a high level of awareness of RT and its transit fare prepayment methods. Thus, convenience of pass purchase and knowledge of transit programs were demand variables already "desensitized" or "disarmed" to a large extent by the time the demonstration began.

Another important result disclosed by the third employee survey helps to interpret one of the results of the second survey -- the rather high rate at which persons start and stop using transit. In the approximately 12 months between the first and third employee surveys, approximately 30% of the transit commuters stopped taking the bus to work; they were replaced by a group that previously used other travel modes. An unknown number also started and stopped sometime within this twelve-month period. Slightly less than 3% of the pass purchasers each month were first-time pass purchasers, but since pass sales were growing by 1.5% to 2% per month, there were clearly fewer pass "dropouts" than new pass purchasers. From these results, it can be inferred that some of the new riders during the discount period would have bought passes anyway, and that this portion is balanced by a normal ridership loss. The data are inadequate for precisely estimating the proportion, but suggest that about one-third of the "new" riders (estimated at 15% of the purchasers of discounted passes) would have started buying passes anyway. Thus, perhaps 10% of the purchasers of discounted passes were truly new riders attracted by the discount.

5.4.2 Characteristics of New Transit Commuters

A statistically valid determination of the types of new transit riders attracted by the pass discount is impossible because of the small number of respondents whose surveys could be matched between the first and second employee surveys. Of the 277 matched responses, only 33 persons had changed from using the bus 0 to 3 days each week to 4 or 5 days each week. Nevertheless, some significant insights were achieved. Unlike the majority of automobile commuters, the persons who changed to regular bus commuting were generally found to have had some bus transit experience. About half had been riding the bus occasionally (i.e., one to three days per week) to travel to work before the discount period. Even more significant was that one-third made some non-work bus trips before the discount period, comparable to the fraction of regular bus commuters (31.5%) and pass purchasers (40.5%) who reported making non-work trips before the discount period. Less than 10% of the non-transit commuters responding to the first employee survey ever made non-work transit trips.

With respect to the demographic parameters of age, sex distribution, annual household income, household size, and workers in household, new transit commuters closely resembled the typical bus commuting population, but they reported slightly less automobile ownership than the regular population. Like the pre-existing population of bus-riding employees, however, the group of new bus riders appeared to have been drawn from all major segments of the population of employees of firms participating in the demonstration.

One interesting result of the surveys was the significant decrease (level of significance of .07) in the bus travel time perceptions of new bus commuters. In the first survey, their mean bus travel time perception was 41 minutes, about the same as for other non-transit commuters. In the December survey, the mean bus travel time perception was 35 minutes, only slightly higher than that of the steady bus commuters.

5.4.3 Travel Behavior Changes

Adjusting for the bias toward previous transit use in the matched responses (see the end of Appendix D-2), 53% of December pass purchasers used monthly passes before their employer joined the demonstration program, 32% paid the fare daily (using either cash, a daily pass, or tokens), and 15% were new transit riders. The travel behavior changes of each of these groups -- pass purchasers, daily payers, and new riders -- were different.

As a group, former monthly pass users did not change their transit usage patterns. Based on the matched responses ($n=156$), the average number of days transit was used for commuting changed from 4.73 to 4.76 days per week, an insignificant increase. In addition, 34.4% reported making at least one non-work transit trip per week before the project, and a nearly identical 34.8% reported non-work trips in December.

Former daily cash-paying transit riders who bought passes in December ($n = 96$) increased their bus use for commuting, but not for other trips. The average number of bus commute days per week rose from 4.16 to 4.57, a 10% increase that is statistically significant ($\alpha = .01$). The percentage of persons making non-work bus trips changed insignificantly, from 24.7% to 26.0%.

The major travel behavior changes were made by former non-transit users (those who never rode the bus before the project) who rode the bus an average of 4.33 days per week in December; 29.2% of these persons also reported riding the bus for some non-work trips in December. These results were based on a small number of matched responses (24 persons), however, and therefore should be taken as indicative rather than definitive.

As described earlier in this report, total commuting trips by December pass purchasers increased by about 19% (15% absolute increase from an initial level of 77.1% yields a relative increase of 19%). The increase in non-work bus trips was lower. The proportion of persons making some non-work trips by bus increased from 28.5% to 31.6% (not statistically significant with $n=274$), reflecting new trips made by former non-transit users. However, non-work trips comprised only about 12% of the transit trips taken by pass purchasers.

5.4.4 Ridership Changes

The pass discount program caused an increase in transit ridership through both the entrance into transit use of former non-users and through the increased usage of transit by monthly-pass purchasers who previously had used cash or tokens to pay single fares or buy daily passes. Any attempt to calculate ridership changes must begin by recognizing two facts. First, there were transit users who were daily cash-paying riders before the discount who did not buy passes during the discount period; their bus usage is likely to have remained basically unchanged. Second, there is a normal turnover of bus users, and some of the new riders during the discount period merely represent replacements for

those who stopped using transit. The ridership level of the daily cash-paying riders has been carefully calculated based on the results of the first two surveys. The results of the third employee survey suggest that about one-third of the new pass purchasers are replacing persons who stop using transit. Considering all these factors, the net ridership increase among employees of participating employers that was stimulated and sustained by the discount was estimated to be around 9.5%, as shown in Appendix D.3. It should be noted, however, that the lack of information about monthly turnover rates makes this an imprecise estimate. The increased ridership by these employees resulted in a systemwide ridership increase of about 1.6%.

5.5 RESIDUAL IMPACTS OF THE DISCOUNT PERIOD (THIRD SURVEY)

5.5.1 Survey Design and Administration

The third employee survey had originally been scheduled for the spring of 1979, several months after the discount period. The RT strike (see Section 3.3.3) disrupted this plan, and the survey was rescheduled for September 1979. In late July, however, RT announced a September 1 fare increase. To avoid having the fare change distort the results of the survey, the survey was moved up to late August. Unfortunately, many employers distributed the survey late, and 53% were completed in September or October. This problem was anticipated, and respondents were asked to report the date they completed the survey so that their responses could be related in time to the beginning of the higher fares on September 1.

As with the first and second surveys, the original intention was to match individual third survey responses with those of the first two surveys. However, due to the problems encountered in matching the first and second surveys, the third survey also included questions on past travel behavior to supplement the matching process. Between the two general employee surveys (the first and third surveys), there were 899 matches, or 19.7% of the smaller third survey response. This sample is very useful for analyzing the long-term changes of the general employee population. However, there were only 141 matches between the second and third surveys, and just 74 persons answered all three. The following analyses of behavioral changes are based on both the past behavior questions appearing on the third survey, and the matching of different survey responses. Appendix E presents a descriptive summary of the responses to the third employee survey.

5.5.2 General Travel Behavior Changes Since Before the Demonstration

For the entire third survey response, the bus mode share for commuting trips was 19.1%, compared to 17.9% in the first survey.⁵ The increase occurred at employers outside the CBD, where the transit mode share increased substantially, from 4.8% to 8.2%. Within the CBD, an insignificant decline from 29.0% to 28.1% occurred. Because some of the variables that predicted whether a person was likely to use transit (notably travel time differences between bus and automobile) were dropped from the third survey in favor of other data, it is difficult to determine if the increase in transit use is due to differences between the two samples, or whether a fundamental behavioral change occurred. Nonetheless, between the first and third surveys, consistent increases in transit usage were observed, even after controlling for workplace location (fair versus poor transit coverage), number of automobiles owned, and the number of household workers per automobile.⁶

Although there was an overall increase in commuting by transit, bus use for travel other than to and from work declined. Of 4,389 third-survey respondents, 8.8% reported making at least one non-work trip per week, compared to 11.4% (n=5033) for first-survey respondents (difference significant at the 1% level).⁷ Among regular bus commuters, the decline was from 31.8% (n=1417) to 29.4% (n=1193), a difference not significant at the 10% level except with a one-tailed test (i.e., unless a decline had been hypothesized a priori). The sharpest decline was among monthly bus pass users: 35.4% (n=415) in the third survey reported bus usage

⁵ It is interesting to note that the increase of 1.2% in the transit mode share (from 17.9% to 19.1%) observed between the first and third surveys was less than the 2.0% increase in carpooling (from 26.8% to 28.8%) and the 1.9% increase in the share for "walked or biked" (from 3.4% to 5.3%). All three alternatives benefited from the general tendency to reduce solo driving.

⁶ The control was exercised over these three variables because they were found to explain much of the variation in transit mode share on the first survey.

⁷ See pages C-6 and E-7 for detailed results of the first and third surveys, respectively, concerning the number of non-work bus trips per week. Respondents to the first survey reflected a greater taking of non-work trips than third-survey respondents in all the non-zero frequency categories recorded--1 to 4, 5 to 8, 9 to 12, and 13 or more trips per week.

for non-work trips, compared to 40.5% (n=457) in the first survey (difference in proportion not significant at the 10% level except with a one-tailed test). The observed tendency toward a smaller proportion of transit users making non-work trips by bus perhaps occurred because the recent forces spurring more transit use, including the September 1 fare increase, have induced many persons who had little or no previous experience with transit to become bus commuters. That is, "novices" in transit use, who have yet to acquire sufficient experience or confidence with the transit system to expand their use of transit to non-work trips, may have become a larger fraction of the population of transit users.

Overall, 35.3% of the bus users responding to the third survey said they primarily used monthly passes, a significant increase from the 31.9% in the first survey ($\alpha=.05$, one-tailed test for expected increase). However, as shown in Section 5.3.4, the likelihood of using a monthly pass appears to have depended principally on the number of bus trips taken per month. Among persons making the same number of weekly bus trips, monthly pass usage increased only after the September fare increase. For example, for those commuting by bus five days per week, 62.2% of the first survey respondents used a monthly pass. On the third survey, among persons completing the survey in August, a comparable 62.8% used monthly passes. However, 69.2% of those who filled out the third survey in September or October used the monthly pass. Thus, other than because of the September fare increase, use of monthly passes versus cash did not change significantly between before and after the demonstration. This result was surprising, since total RT pass sales for June-August 1979 were 17.2% higher than during June-August 1978. Apparently, before the increase in the effective discount of the monthly pass on September 1, 1979, most of the increase in pass usage since the end of the demonstration's discount period (October-December 1978) was due to new riders and to existing riders traveling more often, rather than to a greater preference for the monthly pass, given a constant level of transit use.

Some additional insight into user preferences for different fare payment methods comes from the response to the survey question on why the respondent did not buy a monthly pass. On both surveys, the overwhelming reason given was that the respondent did not use the bus often enough to make the pass economical. Other reasons given on the first survey included a dislike of the large cash outlay (10.9%), inconvenience (8.9%), a lack of knowledge about the pass or where to buy one (6.3%), and fear of losing the pass (2.6%). The only major decline on the third survey was for inconvenience, which dropped to 3.3%.

The decrease in the percentage of users citing inconvenience as a deterrent to purchase of the monthly pass suggests that the program did enhance the convenience of buying passes, but this was not enough to significantly alter fare payment habits. In fact, the convenience of employer-based pass sales turned out to be a less important factor to both employees and employers than had been expected, apparently due principally to the ample presence of public outlets for pass purchase. Certain aspects of the demonstration, such as the simultaneous introduction of both the convenience of employer-based sale of passes and the cost advantage of a 25% discount on passes bought through one's employer, left unclear, however, the precise role that convenience did play in attracting pass purchasers and new transit riders.

5.5.3 The Duration of Transit Use by Individuals

One of the unexpected results of the third employee survey was the degree to which individuals started and stopped using transit. Among employees working at the same location since April 1978, 29.1% of those who said they commuted by bus four or more days per week before May 1978 no longer commuted by bus. This represents an attrition rate of almost 3% per month for these employees who were using transit before the employer pass program began. They were replaced by the 31.1% of current bus commuters who said they used other modes before May 1978. Comparison of the persons responding to both the first and third surveys shows similar results: 31.7% of the matched third survey bus commuters had reported different commuting modes on the first survey. Of those commuting by bus on the first survey, 19.5% reported different modes on the third survey. This somewhat lower figure may reflect a response bias in that those who had stopped using transit were less likely to answer the last survey. (The transit mode share of those who could be matched to the first survey was about 15% higher than for the general third survey response, but the first survey matched response was not significantly different from the overall first survey response.)

In contrast, the new riders attracted by the discount appear to have quit using transit at about double that rate, or 6% per month. At this rate, only 48% of the discount-attracted new riders would still be commuting by transit after one year.

One hypothesis tested with the matched-response sample was that persons using monthly passes were less likely to stop using transit than the daily cash-paying riders. This hypothesis was not supported by the data. In the matched response, there were 140 bus commuters (four or more days

per week) on the first survey; 73 used monthly passes and 67 paid by cash, daily pass or tokens. At the time the third survey was conducted, 84% of the pass users and 78% of the daily cash-payers still commuted by bus, an insignificant difference between the two groups in the rates of persistence as bus commuters. In conclusion, there was no significant difference in dropout rates between the pass users and the daily payers.

5.5.4 Pass Purchasing Patterns

Just as the general transit user population changes over time, the pass purchasing population is also dynamic. On the third survey, employees were asked to indicate whether or not they bought monthly transit passes during four time periods: (1) before May 1978 (the first month of demonstration pass sales), (2) May-September 1978, (3) October-December 1978 (25% discount offered on employer-sold passes), and (4) January-August 1979. For each of these time periods, between 8.8% and 13.5% of all employees indicated that they bought passes during these periods. Exhibit 5.16 charts the purchasing patterns of these pass purchasers, excluding those who were not working at the same location during this time.

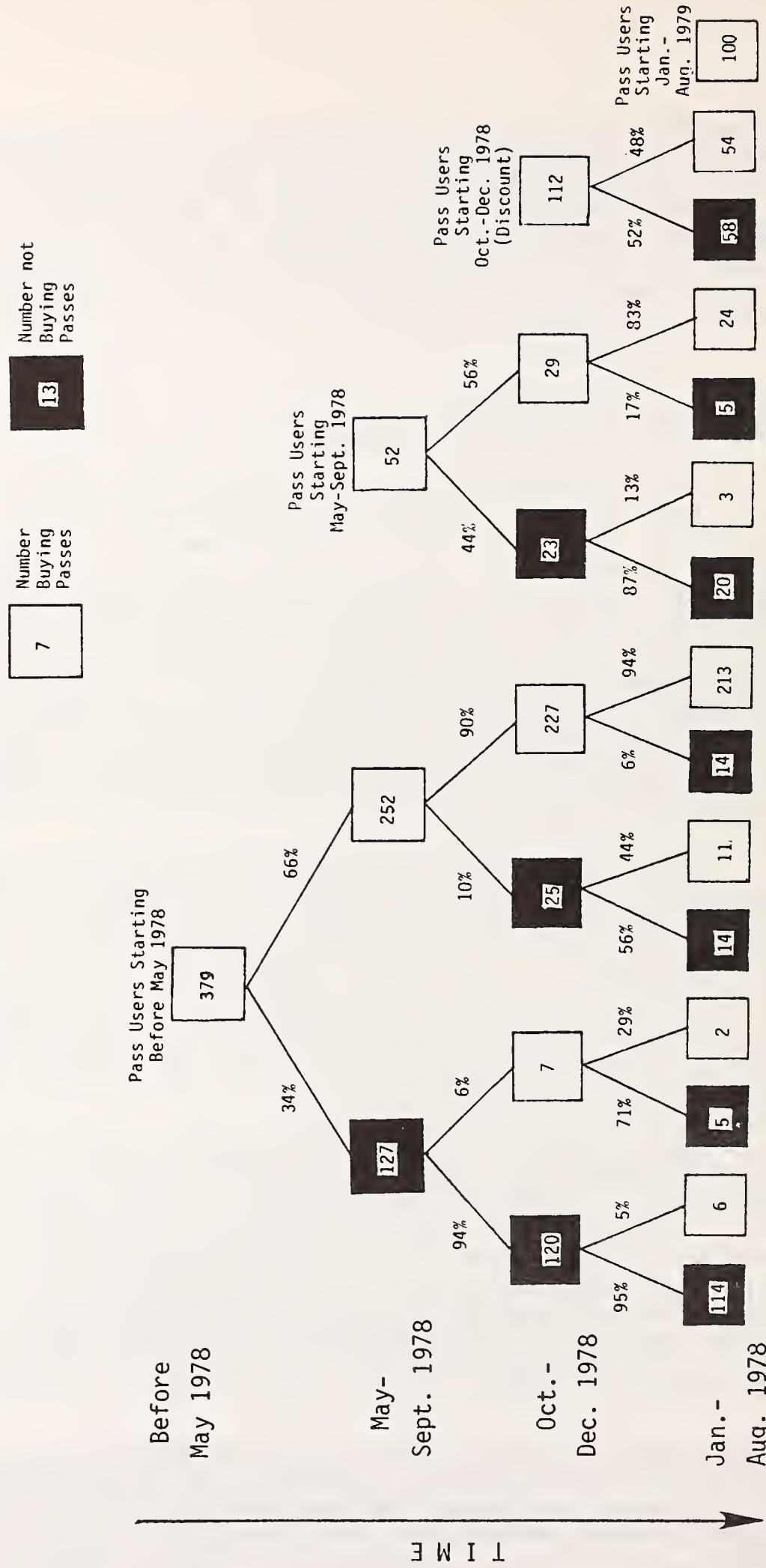
First, the survey data confirm that there are substantial numbers of new pass purchasers over time, and the 25% discount accelerated this trend. During May to September 1978, there were 52 new pass purchasers, or an average of 10.4 per month. In January through August 1979, there were 100 new pass purchasers, yielding a similar average of 12.5 new buyers each month. From October through December, the discount period, there were 37.3 new buyers per month, or triple that of the other periods.

However, the new pass buyers during the discount period appear to have had a lower retention rate than new buyers at other times. Forty-eight percent of these new buyers also bought a pass in the January-August 1979 period, somewhat lower than the 56% and 52% of May-September 1978 starters who also bought passes in the discount period and the following January-August 1979 period, respectively. Among the larger group who bought passes before May 1978, 66% were still buying in May-September 1978, and 61% bought passes in January-August 1979.

Averaging the attrition of pass purchasers over the time periods involved, one obtains a monthly dropout rate on pass purchase of roughly 10 percent per month among employees who bought passes for the first time during the discount period. This rate of attrition in pass purchase is approxi-

EXHIBIT 5.16

PASS PURCHASING HISTORY
 (EMPLOYEES WORKING AT SAME LOCATION SINCE MARCH 1978)



mately double the 4% to 6% per month rate at which employees who bought passes before May 1978 stopped buying passes. It is also higher than the approximately 8% per month dropout rate in pass purchase estimated for employees who started using passes in the May-September 1978 (pre-discount) period. Nonetheless, the data show that for some employees the 25% discount did more than divert them temporarily to pass buying; once attracted, many of the new buyers continued buying passes. Even with a 10% per month dropout rate in pass purchase, 28% of the new pass purchasers would still be buying passes a year after the discount. Moreover, almost half of them would probably still be using transit to some extent because their rate of dropping out from transit use (estimated to be about 6% per month) is lower than their dropout rate for pass purchase.

The second survey results showed that most new pass buyers during the discount were former cash-paying transit users. The third survey results suggest that many of these persons had also bought a pass sometime in the past. However, about 15% of all the discounted-pass purchasers were new transit users, and this group is of special interest to the evaluation. The third employee survey identified exactly 100 persons who had been working in the same location since March 1978, had not been commuting by bus before April 1978, but had bought a monthly pass during the discount period. Sixty percent of these employees bought a pass at least once during January-August 1979, a slightly higher percentage than for all new pass buyers in the discount period. Fifty-six percent were commuting by bus when the third survey was taken, and the frequency of bus use for the group of 100 employees was 60% of that computed (using results of the second survey) for new transit riders during the discount. Thus, about 60% of the discount-period bus usage by new users continued eight months after the discount period, although the increase in gas prices and the gas shortage between January and August may be partly responsible for transit's holding or recapturing some of this group of new users attracted by the discount.

The bus usage by new users during the discount period accounted for most of the estimated 9.5% ridership increase that occurred during the discount (see calculation in Appendix D.3, page D-20). About two percent of this increase was caused by former daily cash-paying riders who switched to pass usage, and data from responses matched among all three surveys indicate that these riders returned to their former level of transit usage. The 60% retention rate for new riders indicates there was a 4.5% ridership increase (60% of 7.5%) among employees at participating firms after the discount period relative to the level before the discount. The 6.7% increase in transit usage for commuting (which includes a general growth in transit usage), as disclosed by the

increase in the transit mode share from 17.9% to 19.1% between the first and third surveys, supports this conclusion.

Systemwide, the 4.5% ridership increase among eligible employees represents about a 0.7% ridership increase. This small increase in ridership associated with the employer pass program could have had only a marginal and immeasurable effect on the productivity of transit vehicles. Moreover, since bus service in Sacramento appears to be supply-limited on some lines at peak commuting times (i.e., the buses are very crowded with standees), new employee riders may actually have discouraged some existing or potential riders from using RT.

The extensive marketing efforts made to publicize the monthly pass to employees of firms participating in the PASSport program do not appear to have decreased the fraction of people who reported ignorance of the monthly pass and where to buy it. Consider the following mini-table:

<u>Reasons for Not Using Pass</u>	<u>First Survey (n=1048)</u>	<u>Third Survey (n=890)</u>
Don't know about pass	3.1%	3.0%
Don't know where to buy pass	3.2%	3.1%

The fact that all but three percent of the employee population knew about the monthly pass before the start of pass sales at their place of employment left little room for improvement; it also substantiates the hypothesis that, as a result of considerable prior exposure, employees of participating firms were essentially insensitive to the factors of novelty and convenience in transit fare prepayment through monthly pass purchase.

6. ECONOMIC IMPACTS

6.1 TRANSIT REVENUES

The \$3 pass discount offered by RT in October, November, and December 1978 resulted in a loss of transit revenues during that period, although analysis suggests that this loss was made up by new riders who continued to use transit following the discount period. For December 1978, the month the second employee survey was taken, a net revenue loss of \$4,711 was calculated; this loss represents 11% of the revenues received by RT from sales of passes to employees before the discount (see Appendix D.3, page D-21). By multiplying the estimated December revenue loss (\$4711) by the ratio of the number of passes sold through employers over the entire three-month discount period to the number of passes sold through employers in December, a revenue loss of \$11,894 is estimated for the discount period.

This loss, however, seems to have been more than recovered in subsequent months because an estimated 280 employees became new transit users (10% of 2800 pass purchasers) during the discount period. Responses to the third employee survey, distributed in August and September 1979, indicate that about 60% of these new transit riders continued to use transit, with more than half continuing to buy passes each month. Former non-users of transit who bought passes during the discount were still making an average of 6.5 bus trips per week at the time the third survey was taken. At a very conservative (low) average fare of \$0.28 per trip (a combination of pass and cash usage), it is estimated that these users generated about \$10,000 of revenues for RT in the first four months after the discount period (i.e., during January-April, 1979). Thus, had it not been for the transit strike in May 1979, the revenue loss caused by the discount would have been made up by the new users in about five calendar months. As it was, the revenue loss was probably recovered by July 1979.

The revenue gain that can be attributed to the discount-attracted new riders declines with time, since each month an estimated six percent of the new riders stop using transit. Nevertheless, including the effect of the fare increase on September 1, 1979, a net revenue gain in the following year (from August 1979 through July 1980) of about

\$18,500 would be expected, assuming an average fare of \$0.39 per trip and a 6% monthly dropout rate for the new users.

6.2 RT ADMINISTRATION

6.2.1 Demonstration Expenditures

Exhibit 6.1 summarizes demonstration expenditures through December 31, 1979. It covers a 26-month period starting six months before the first employer pass sale. About half of the demonstration expenditures covered RT administrative salaries and fringe benefits; by the end of the demonstration, \$84,283 of the total demonstration budget of \$169,765 had been spent on these items. The three other major categories of expenditures, for which little or no additional expenses were incurred after December 31, 1979, were survey data collection (\$30,281),¹ the pass discount subsidy (\$21,553), and public relations and advertising (\$18,062).

6.2.2 Pass Program Administration

The demonstration expenditures reported in the previous section include start-up costs and extensive marketing and public relations efforts related specifically to the employer pass program. The normal monthly costs of administering the employer pass program, exclusive of these special efforts, were much more modest. For one thing, RT already had a pass program to which the employer "Monthly PASSPORT" demonstration program could in some ways be "piggybacked." During the first year of employer sales of passes (i.e., through June 1979), RT's average cost of administering the employer pass program was estimated to be \$1,111 per month.

Midway through the distribution phase of the demonstration, and with the approval of the UMTA authorities responsible for the Sacramento TFP demonstration, RT began on July 1, 1979 a yearlong process of fully integrating the administration of the employer ("Monthly PASSPORT") pass program and the pass sales through all other outlets. By the end of the demonstration in June 1980, RT had brought all pass outlets under a single administrative regime within its Fare Prepayment Department.

¹ The end-of-demonstration total for survey data collection is \$31,462.

EXHIBIT 6.1

DEMONSTRATION EXPENDITURES THROUGH DECEMBER 31, 1979

(Total Budget: \$169,765)

	<u>Funds Expended</u>	<u>Percent of Total</u>
Management direct labor	\$ 38,950	26
Clerical direct labor	15,644	10
Employee benefits (management and clerical)	14,728	10
Travel	4,533	3
Materials and equipment	8,370	6
Public relations and advertising subcontracts	18,062	12
Data collection (surveys) subcontract	30,281	20
Transit operations (pass discount subsidy)	<u>21,553</u>	<u>14</u>
TOTAL	\$152,121	100
PERCENT OF TOTAL BUDGET	89.6	

Exhibit 6.2 shows the estimated average monthly costs (for the year ending June 1980) of administering RT's entire transit pass program, which encompasses almost 60 public and "private"² pass outlets as well as the 50 employer outlets that are the direct result of the demonstration. These monthly costs, which totaled \$1,147, represent what a transit property might expect to incur in a relatively "steady-state" situation involving the monthly sale of approximately 10,000 passes through 100-110 outlets. On this monthly volume of passes sold (some 20%-25% more passes may be distributed to outlets than are ultimately sold by them), the cost per pass sold works out to 11.5 cents.³

More precisely for the case of Sacramento, between July 1979 and June 1980 inclusive, through all outlets RT sold an average of 7,017 passes and 3,428 stickers (good for zone fares in conjunction with a monthly pass or serve as a monthly pass for the elderly and handicapped) each month, for a total of 10,445 monthly prepayment instruments. This results in a cost per instrument of 11.0 cents (\$1,147/10,445). According to the third employee survey, the average pass user made 46.4 bus trips each month, so the 11 cents of administrative cost per instrument represents an additional cost of approximately 0.25 cents per trip (0.5% of the 50-cent regular fare applicable after September 1, 1979).⁴ However, elderly and handicapped pass users probably make fewer trips per month (since their relative discount is much greater), so the administrative cost for their trips is probably higher. Assuming the average elderly pass user makes 27 trips per month (applying the same ratio of actual trips to the breakeven number of trips as for employees), an additional cost of 0.41 cents per trip is calculated.

² "Private" outlets do not sell passes to members of the general public; on the other hand, their distribution of passes may involve people who are not their own employees. For example, private outlets often dispense passes to people who are in some sense "clients" of the issuing organization.

³ The administrative costs depend more on the number of outlets involved than on the number of passes sold. Therefore, if only 5,000 passes were sold through 100-110 outlets, the cost per pass sold would be almost twice the 11.5 cents cited on the basis of sales of 10,000 passes.

⁴ Some transit patrons must use one or two stickers in conjunction with a monthly pass to cover an additional zone fare. Thus, the average number of TFP instruments used per trip is greater than 1.0. The calculation assumes that about 700 stickers are used in conjunction with passes.

EXHIBIT 6.2

MONTHLY COSTS TO RT OF ADMINISTERING THE MONTHLY PASS PROGRAM (As of June 1980)

Pass Production (1/12 of Annual Costs in 1980)

Typography, photography, production	\$ 50
Printing (18,000) passes	192
Tax	<u>12</u>
SUBTOTAL	\$254

Pass Outlet Administration

Preparing pass orders and invoices for each outlet (20 hours X \$6/hour)	120
Pass deliveries and some pickups of previous month's passes (44 hours X \$7/hour)	308
Mailing of some passes	20
Checking payments received and preparing monthly sales report (30 hours X \$9/hour)	270
Extra clerk at passenger service center at end of month (5 days X 7 hours/day \$5/hour)	<u>175</u>
SUBTOTAL	\$893
TOTAL MONTHLY COSTS TO RT	\$1147

With respect specifically to the cost-effectiveness of offering the sale of passes through employers when numerous public outlets also exist, one can ask what volume of employer pass sales would be necessary in order to generate sufficient new revenues to cover RT's cost of administering the employer pass program. Employer outlets represent almost half of all pass outlets. Thus, almost half of RT's \$972 of monthly administrative costs not related to a specific pass outlet (i.e., \$1,147 less \$175 for the month-end clerk at RT's passenger service center), say \$480, might be attributable to the employer pass program. At \$12 (\$16) each, the sale of 40 (30) passes each month to new riders (those who without the employer pass program would not have used transit) would be necessary to cover RT's monthly administrative cost of the employer pass program. The evidence on pass sales suggests that, in the absence of a discount on passes bought from employers, the number of employees opting each month to become new transit riders and pass buyers solely because of the employer pass program might be insufficient to recover the costs of administering the employer pass program.⁵

One hypothesized benefit of fare prepayment is that it improves the cash flow of the operator by collecting revenues prior to the actual transit usage.⁶ Early in the demonstration the improvement in RT's cash flow from its pass program was at best marginal. Until the program to unify the employer pass program and RT's other pass sales was substantially completed, RT realized essentially no net cash flow benefit because non-RT public outlets did not submit money from pass sales to RT until after the 20th of the month in which the passes were used (when RT delivered the next month's passes). For these revenues received after the

⁵ Greater use of passes, by reducing the number of cash fares paid, may reduce to some extent the cost of handling farebox receipts. If the employer pass program were responsible for any savings in cash collection/handling costs, then these savings would effectively lower the net costs of the program and, therefore, the number of new riders required to recover costs.

⁶ Of course, to the extent that the fare prepayment instrument affords the user a discount in comparison to the amount he or she would pay in cash on any given day for the use of transit, the transit district may receive less revenue than if the fare prepayment instrument in question were not offered. A transit district will lose money by offering a discounted fare prepayment instrument if the elasticity of demand (i.e., the percentage increase in ridership) is smaller than the effective percentage discount of the fare prepayment instrument.

middle of the month, RT effectively suffered a negative cash-flow effect. Only the passes sold directly by RT at its headquarters and one downtown outlet, which historically comprised from 20% to 25% of all passes sold, generated cash significantly ahead of time. The cash-flow benefit of receiving funds one-half month ahead of time for approximately 1,000 passes sold through RT's own outlets roughly compensated the cash-flow loss on some 2,000 passes sold through non-RT public outlets.

As for the employer outlets, they sent in payments around the fifth of each month. Thus, each employer-sold pass provided a small absolute cash-flow benefit because RT received the cash for it before the middle of the month; relative to passes sold through outlets not paying RT until after the 20th of the month, the passes sold through employers represented the larger benefit of about a 15-day improvement in cash flow to RT. At interest rates between 1% and 1.25% per month (12% to 15% per year, simple annual interest rate), the absolute cash-flow benefit of a \$12 employer-sold pass was 3 to 5 cents, and its relative cash-flow benefit with respect to a pass sold through a non-RT public outlet was about 5 to 7 cents. Thus, on 1200 passes -- roughly the average number of passes sold per month by employers in the January-August 1979 post-discount and pre-fare-increase period -- the improvement in RT's cash flow due to the employer pass sales could have been \$36 to \$60 per month in absolute terms and \$60 to \$84 per month relative to the same volume of passes sold through non-RT public outlets.

As a result of the revised procedures instituted for the unified administration of pass sales, by the end of the demonstration most pass outlets were turning in the proceeds from the sale of passes between the fifth and twelfth of the month in which the passes were valid. Furthermore, under the streamlined procedures, the accuracy of the returns were verified and the monies received were deposited to RT's account the same day RT received them. The earlier receipt of and access to these funds by RT did improve significantly the cash-flow benefit from RT's monthly pass operation.⁷ Since essentially all payments from outlets were received by the twelfth of the month, essentially all passes sold represented a positive contribution to RT's cash flow situation; the positive effects of the early receipt of money from passes sold by RT's own downtown and headquarters outlets

⁷ Again, neglected here is any reduction in RT's gross revenue that may have resulted from RT's offering of a monthly pass priced at an amount less than that which most purchasers would spend on daily fares if the monthly pass were not available.

were no longer cancelled out by post-middle-of-the-month receipts from most of the other public (non-employer) outlets. For the opportunity cost of money in the range of 1% to 1.25% per month (12% to 15% simple annual interest rate), and at the level and mix of pass sales by outlet type experienced in June 1980,⁸ the cash-flow benefit potentially realizable by RT from all sales of \$16 monthly passes (about 9,600 passes sold) would appear to be between \$200 and \$400 per month.⁹

Under RT's new procedures, the receipts from the sale of passes through employers arrive at RT an average of six or seven days before the receipts from the other non-RT outlets. Thus, at an interest rate of 1% to 1.25% per month, the cash-flow advantage of having employer outlets instead of other non-RT outlets sell between 1,200 and 1,900 passes each month (the approximate range of monthly sales through employers between September 1979 and June 1980) can be calculated to be roughly between \$40 and \$90 per month. This level of cash-flow benefit represents from 8.3% to 18.8% of the estimated \$480 monthly cost of administering the employer pass program.

6.3 EMPLOYER ADMINISTRATION

When consulted by telephone, almost all employers reported that the costs they incurred from participating in the demonstration were negligible (see Section 4.5). Prior to this telephone contact, RT had asked employers to record their monthly costs, in order to statistically substantiate the accuracy of their perceptions. Employers were

⁸ June pass sales (and percent of total sales) by outlet type were as follows: RT outlets, 1,631 passes (17%); employer outlets, 1,920 passes (20%); County Welfare Department, 2,856 passes (30%); and other public and private outlets, 3,217 passes (33%).

⁹ Between 35%-40% of the total cash-flow benefit is derived from the sale of passes through RT's own outlets, which turn in the bulk of their receipts on or before the first day the passes are valid (first of the month). Receipts from employer-sold passes, whose arrival at RT tended to concentrate around the fifth of the month, account for 25%-30% of the cash-flow benefit. Although pass sales to the Welfare Department and through all other public and private outlets were 63% of all sales, they accounted for only 30%-40% of the cash-flow benefit because RT received the receipts from these sales around the 11th or 12th of the month (only 3 or 4 days before mid-month).

instructed to stop documenting their costs after June 1979, but most stopped after the RT strike in May. Altogether, 48 employers reported costs an average of six months each.

Employers usually reported actual costs, but occasionally only data in the form of person-hours was provided. In the latter case, hours were converted to monetary value at a rate of \$5 per hour, reflecting the use of clerical staff for most required project activities. Over the group of 48 employers which submitted cost data, the costs due to converted hours represented only 10% of the program costs reported.

The average monthly cost per employer was \$30.80, including \$18.12 for pass sales and distribution, \$5.81 for surveys and interviews, \$4.54 for payroll deduction (although only accrued by a handful of firms), and \$2.34 for miscellaneous costs, such as mailing. Among the 48 participating firms, average monthly costs ranged from \$0 to \$168. Several firms with high costs increased the average cost substantially; the median monthly cost was only \$11.25. The average cost to employers per pass sold, obtained by dividing the total costs reported by employers by the number of passes they sold, was 50.4 cents.

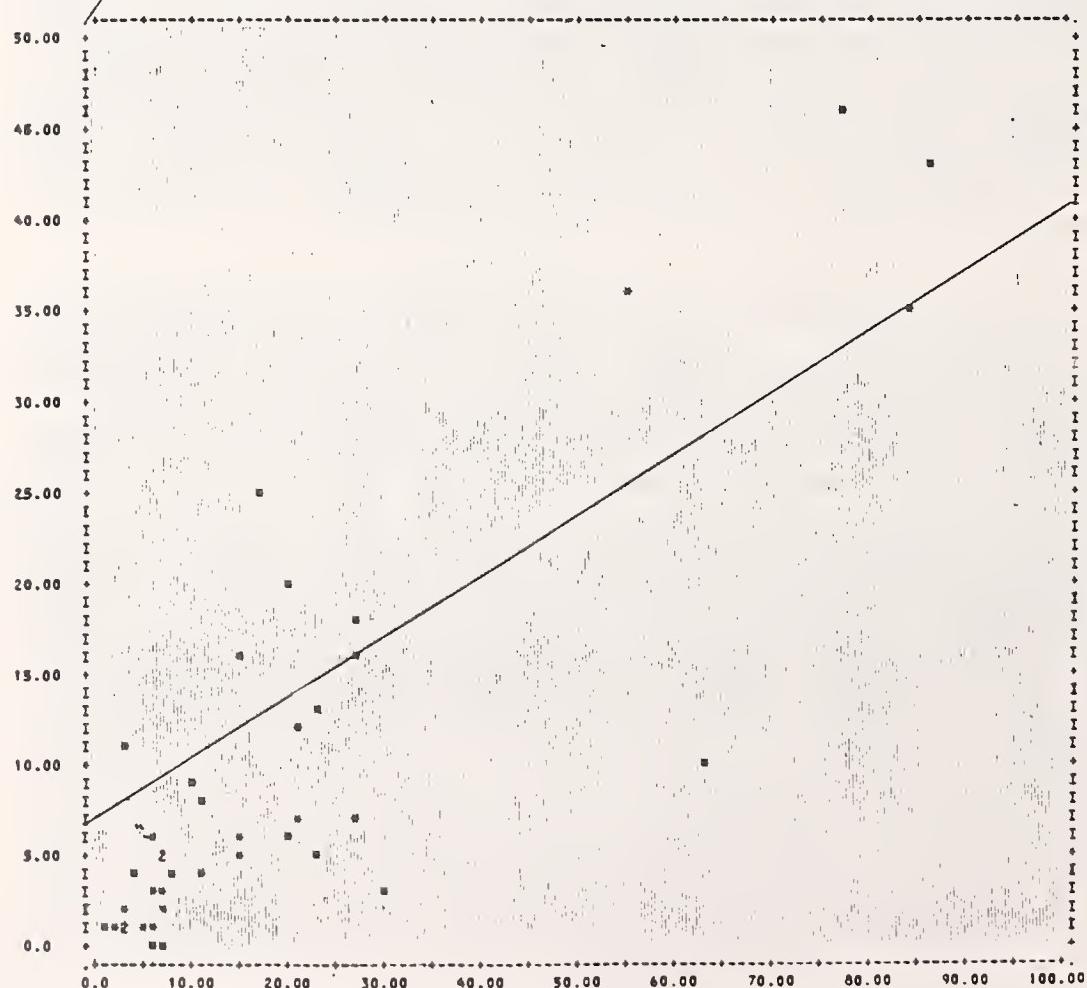
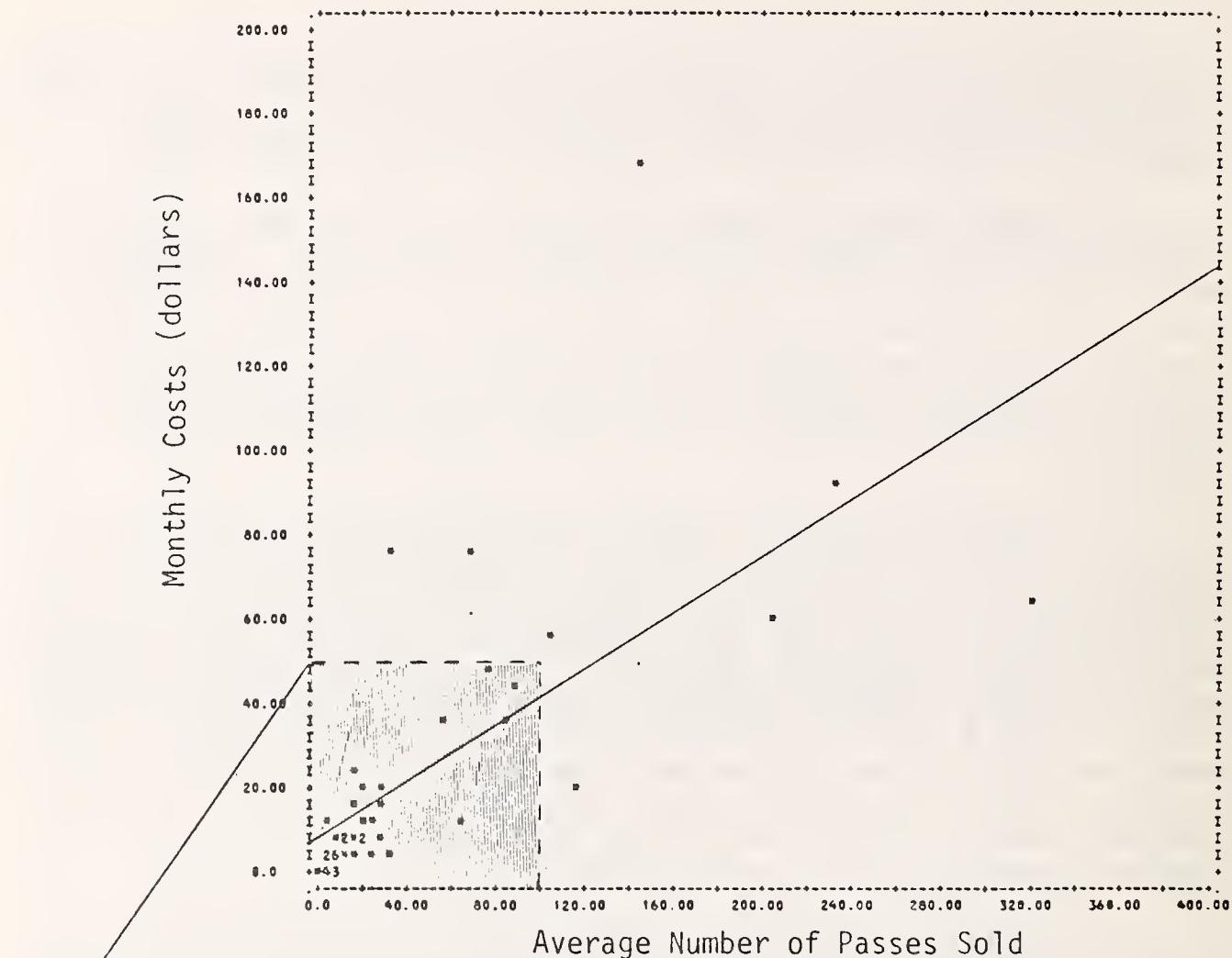
A positive correlation was found to exist between the reported monthly costs and the number of passes sold. Exhibit 6.3 shows the least-squares linear regression line for the observed cost data, excluding costs for payroll deduction and surveys. An R-squared of 0.49 existed between the average monthly costs for an individual firm, and the average number of passes sold by that firm during the reported months. The simple regression equation was:

$$\text{Monthly Costs} = \$6.72 + \$0.34 \times (\text{number of passes sold})$$

This equation shows a fixed cost of \$6.72, even if no passes are sold, and a variable cost of 34 cents for each pass sold. However, a few extreme data points appear to flatten the regression line (top portion of Exhibit 6.3). For example, eliminating the rightmost point (318, 63) would result in a regression line with a higher slope (42 cents variable cost) and a smaller constant term (\$4.92 fixed cost). Thus, as a crude measure, taking the variable (marginal) cost to be equal to the average cost of 50 cents per pass sold, and assuming no fixed costs, does not appear an unreasonable simplification.

EXHIBIT 6.3

MONTHLY EMPLOYER COSTS AS A FUNCTION OF THE NUMBER OF PASSES SOLD



7. SUMMARY AND CONCLUSIONS

7.1 INTRODUCTION

The Sacramento Transit Fare Prepayment Demonstration focused on the sale and distribution of monthly transit passes through employers. Prior to the demonstration, which began its organizational phase in mid-October, 1977, its employer solicitation phase in March, 1978, and its distribution phase in June, 1978, the Sacramento Regional Transit District (SRTD, or simply RT) had been selling monthly transit passes to about 20% of its riders at 35 public outlets scattered throughout its service area.

During the solicitation phase of the demonstration, RT invited major employers located throughout the metropolitan area it served to sell passes to their employees. After a frontal approach to the employers resulted in few enlistments, RT devised a new marketing approach aimed at applying pressure to employers via their transit-riding employees. Through surveys distributed on buses, signs on buses and bus-stop benches, and newspaper advertisements, RT made transit commuters aware of its "Monthly PASSport" program (the name under which RT marketed the program of employer-based pass sales) and a special \$3 discount offered on employer-sold passes for October, November, and December 1978. The combination of the discount and the advertising aimed at employees resulted in a rapid rise in the number of enlisted employers, from 9 in July 1978 to 52 in November 1978. During the balance of the demonstration, which ended in June 1980, between 50 and 55 employers were participating in the pass program in any given month; a total of 66 employers participated in the demonstration. RT has continued the employer pass program as part of its overall program for the sale of monthly passes.

The primary demonstration objective was to "test the impact on pass sales and thereby transit riding of various methods of marketing monthly passes through employers...The ultimate goal [was] to increase transit ridership through

extended availability of prepaid passes."¹ RT also cited the following secondary objectives for the demonstration:

- Institute payroll deduction as a form of pass payment;
- Develop, test and evaluate strategies for obtaining employer participation;
- Test the impact of price discounts;
- Improve the relationship between RT and the local business community;
- Improve RT's cash flow through earlier passenger revenue receipts; and
- Advance transit passes as an employee fringe benefit.

The subsequent sections of this chapter summarize the key findings and conclusions of the demonstration. In turn, the demonstration's impacts on employer participation, accessibility (supply) of TFP instruments, travel behavior (demand) changes, and operator economics and productivity will be covered. The final section of the chapter discusses the transferability of the results of the Sacramento demonstration to other settings.

7.2 KEY FINDINGS OF THE DEMONSTRATION

7.2.1 Impact on Employer Participation

1. A marketing approach aimed frontally at the employers yielded only a weak positive response when the appeal was to providing their employees a convenience benefit and/or to saving the employer money on parking costs. The formation of a project Booster Committee, the obtaining of endorsements from organizations and prominent individuals, and the accompanying media coverage cannot be shown to have been necessary or cost-effective parts of a successful promotional campaign. After three months of promotional effort involving these elements, as well as direct mailings and follow-up telephone calls from RT, only ten firms of some 140 firms contacted had committed themselves to participating in the pass program. The vast majority of employers initially contacted saw little benefit to themselves or to

¹ Sacramento Regional Transit District, Demonstration Application Program Narrative, Sacramento, California, November 24, 1976, page 2.

their employees of employer-based pass sales since the monthly passes were readily available in numerous public outlets.

2. A marked increase in employer participation in the Monthly PASSPORT program was achieved with a revised marketing approach combining the offering of a 25% discount on passes for three months and the application of pressure on employers through bus-riding employees made aware of the employer pass program by surveys distributed on buses and a public promotional campaign. By the second month of the discount period (November 1978), 52 employers were participating in the pass-sales program.

3. Although pass sales through employers dropped markedly after the discount period, the great majority of employers felt the Monthly PASSPORT program had positive value and remained in the program. Employers reported that it cost them about fifty cents for each pass sold. During the fifteen months after the discount period the number of employers participating fluctuated between 50 and 55, with 11 additions and 10 deletions. The majority of the firms dropping out did so either because a public outlet was very close (generally within one block) or because none or few passes were being sold each month; under these conditions, the benefits of participation were considered insufficient to justify even the small administrative cost involved.

4. Nearly 85 percent of the participating employers questioned (44 of 52) felt that the total costs in administering the program were negligible.

5. Other than the size of the employing organization, the major predictor of the volume of pass sales was location; those firms with good transit service sold more passes than those with poor service.

6. Although the use by employers of a payroll-deduction plan for pass purchase had been suggested by RT, less than 15% of the participating employers offered the payroll-deduction option to their employees. For reasons not well understood, in firms where pass purchase was offered only through payroll deduction, the percentage of employees purchasing passes at work was much lower than that in firms selling passes over the counter or by subscription.

7. Seven employers (11%) took up the idea promoted by RT of subsidizing the purchase of monthly passes by employees. Only one employer subsidized the purchase of monthly passes throughout the entire distribution phase of the demonstration; that non-CBD employer, whose \$6 subsidy represented 50% of the pass price until the cost of a monthly pass rose to \$16 on September 1, 1979, accounted for over

two-thirds of all employer-subsidized passes sold. Three of the other pass-subsidizing employers were small CBD firms that did not provide parking for their general employee.

7.2.2 Impact on the Accessibility (Supply) of TFP Instruments

From the perspective of employees who worked for an organization participating in the demonstration, the employer pass program added one pass outlet to the 35+ public outlets sprinkled throughout RT's service area. Although the employer's pass outlet was generally closer to the work stations of most of its employees than any public outlet, the pattern of pass sales suggests that, in the cases of most of the participating employers, the majority of their employees had ample opportunities to buy a monthly pass while doing day-to-day activities away from work. In sum, employer-based sale of transit passes appears to have increased the convenience of purchase of monthly passes to only a small extent in Sacramento due to the prior and concurrent existence of numerous public outlets where passes and other transit fare prepayment instruments (e.g., tokens) could be bought.

7.2.3 Impact on Travel Behavior and Demand for Monthly Passes

1. RT's monthly pass sales, which had been growing at about 30% per year before employer pass sales began, continued their upward trend throughout the demonstration. The 25% discount on employer-sold passes for October, November, and December 1978 caused employer pass sales to increase sharply and total pass sales to rise an estimated 10.1%, 21.0%, and 23.0% above projected levels during each of those months, respectively. After the discount, sales of passes through employers dropped to less than half their November and December levels. Total pass sales through all outlets, including employers, were still significantly above projected values (+8.3%) in January 1979, but by February and March the gains had diminished to 2.8% and 0.6%, both insignificantly above projections based on pre-discount trends.

2. Many transit-riding employees who already were using monthly passes responded to the 25% discount on employer-sold passes by switching their pass purchase from a public outlet to their employer. Approximately 60% of the passes sold through employers during the discount were due simply to change in location of purchase in order to obtain the discount. Using the results of the discount-period

(second) survey in conjunction with the first and third surveys, it has been estimated that approximately 10% of the purchasers of discounted passes were truly new riders attracted by the discount (see Section 5.4.1).

3. The new riders attracted to transit by the discounted monthly pass appear to stop using transit at about double the rate of transit users in general. However, between fifty and sixty percent of these new transit users continued to use the bus eight months after the discount period.

4. According to the employee surveys of April-September 1978 and August-October 1979, over the course of the demonstration the percentage of transit-using employees who normally used the monthly pass increased slightly from 31.9% to 35.3% (significant at .05 level with one-tailed test for expected increase).

5. Use of the monthly pass relative to the use of cash as the fare payment method did not change significantly during the demonstration until after the fare increase in September 1979. This result was surprising, since total RT pass sales for June-August 1979 were 17.2% higher than during June-August 1978. Apparently, before the increase in the effective discount of the monthly pass on September 1, 1979, most of the increase in pass usage since the end of the discount period (October-December 1978) was due to new riders and to old riders traveling more often, rather than to a greater preference for the monthly pass for any specified frequency of trip-making per month.

6. Compared to both the overall population of employees in firms participating in the PASSPORT program and the subpopulation of transit-using employees, the group of pass-buying employees includes proportionately more women and proportionately more lower-income persons. The results of the second survey show that the subpopulation of employees who bought discounted passes in December 1978 included proportionately more women over fifty years of age with household incomes less than \$10,000 than the employee population as a whole. On the average, the pass-buying subpopulation has a slightly smaller household size, slightly fewer workers per household, and lower automobile ownership than the overall employee population.²

² These tendencies are all consistent with a higher proportion of households headed by women in the pass-buying population than in the general employee population.

7. Comparison of the pre-implementation (first) survey of employees with the post-discount, mid-demonstration (third) survey shows no significant shift to transit by employees. In the first survey 77.5% (n=5125) and in the third survey 76.9% (n=4515) of respondents said they used the bus zero days per week for commuting. With respect to the use of transit for non-work trips, the percentage of respondents indicating that they made zero trips on transit per week rose slightly (significant at better than the 1% level), from 88.6% to 91.2% between the first and third surveys.

8. The extensive marketing efforts made to publicize the monthly pass to employees of firms participating in the PASSpoRT program do not appear to have decreased the fraction of people who reported ignorance of the monthly pass and where to buy it. The fact that all but three percent of the employee population knew about the monthly pass before the start of pass sales at their place of employment left little room for improvement.

9. Due to RT's public promotional campaign concerning the three-month discount period, RT received considerable criticism for offering the 25% discount only on passes bought through employers participating in the "Monthly PASSpoRT" program. Those ineligible for the discount complained of unfair treatment. This reaction, which cost RT some loss of esteem, points out that transit demonstrations should try to avoid inequity of treatment of different groups; if a temporary inequity is unavoidable in order to evaluate an innovation, any public announcements concerning the inequity should explain the goals and extent of the test program.

7.2.4 Impacts on the Transit Operator

1. The employer pass program appears to have increased transit ridership about 1.6% during the three-month period when a 25% discount was offered on employer-sold passes. Eight months after the discount the increase in transit ridership attributable to the employer pass program was estimated to be approximately 0.7%.

2. The new transit users attracted by the 25% discount who continued using transit after the discount appear to have generated sufficient revenue in the eight months following the discount period (this includes the effect of the transit strike in May 1979) to make up the approximately \$12,000 of lost revenues during October-December 1978 when a \$3 discount was given on employer-sold passes. Since an estimated 60% (168 employees) of the new riders attracted by the discount were still using transit for commuting (about

70% of these were using monthly passes) in August 1979, additional revenues perhaps reaching \$18,500 (including the effect of the fare increase on September 1, 1979 and assuming a 6% per month drop out rate) might have been generated by this group of transit riders in the year beginning September 1979.

3. The employer pass program had a positive but small effect--between \$40 and \$90 per month--in terms of the value of the improvement in cash flow to RT. Revenue from the sale of passes through employers was received by RT an average of six to seven days sooner than revenues from other public and private pass outlets (excluding RT's own downtown and headquarters outlets, which deposited proceeds earlier, on average, than all other sales outlets).

4. The increased ridership due to the employer-based pass program was too small to have had more than a marginal and immeasurable effect on the productivity of transit vehicles. Since bus service in Sacramento appears to be supply-limited on some lines at peak commuting times, new employee riders may actually have discouraged some existing or potential riders from using RT.

5. The ongoing administrative cost to RT for carrying on the employer pass program was determined to be \$1,111 per month during the first year of employer pass sales. Consolidation of all of RT's pass sales activities under one administrative regime during the second year resulted in average monthly costs for all pass sales of \$1,147, of which approximately \$480 may be attributed to the employer pass program. Even at this lower figure, however, the evidence on pass sales suggests that, in the absence of a discount on passes bought from employers, the number of new riders purchasing passes each month solely on account of the employer pass program might be insufficient to recover the costs of administering the program.

7.3 GENERAL CONCLUSIONS BASED ON DEMONSTRATION FINDINGS

In the Sacramento demonstration, the sale of monthly transit passes through employers appears to have had a very small long-term positive impact on the total number of passes bought by employees each month and on transit ridership. The small impact is attributed mainly to the fact that a large share of the market for monthly passes had already been penetrated prior to the demonstration as a result of the existence in Sacramento of:

- A relatively mature transit system that had been offering transit fare prepayment instruments--including the monthly pass--for five years prior to the demonstration;
- A relatively large number (35+) of public pass sales outlets scattered throughout the transit system's service area; and
- A relatively high level of transit use by Sacramento commuters prior to the demonstration.

However, RT perceived another important "spin-off" benefit of the employer pass program, namely, heightened community awareness of transit and greatly increased employer involvement with RT. Toward the end of the demonstration a fruit of the heightened community awareness and employer involvement was the decision by the County of Sacramento's Welfare Department to purchase in excess of 2,300 passes each month for distribution to recipients of general assistance aid. The Welfare Department became RT's largest (by far) single buyer of monthly passes. Its bulk purchase each month was fifty percent greater than the total volume of passes sold through all the employers (more than fifty) in the "Monthly PASSpoRT" program, and therefore served to greatly reduce the overall cost per pass sold of administering the pass program.

The impact of the demonstration on pass sales and transit ridership would probably have been greater if more employers had offered employees a continuing economic incentive for pass purchase. Only one employer offered passes at a discount--in this case a \$6 discount--to its employees throughout the entire distribution phase of the demonstration. This large employer, the Sacramento Municipal Utility District (SMUD), accounted for well over half of all employer-subsidized passes sold but only 4% to 7% of each month's pass sales through the monthly PASSpoRT program since January 1979 (i.e., since the end of the 25% discount period).³ SMUD's pass sales represent only one to one and one-half percent of all SRTD pass sales. Therefore, although SMUD's sales volume may demonstrate a stable and generally increasing demand for discounted monthly passes on the part of its employees, SMUD's increase in pass sales from 50 to 107 over

³ SMUD, which employs about 1700 people, is the only participating employer selling 30 or more passes per month that sold more passes in December 1979 than in December 1978, and more passes in the period December 1979-February 1980 than in the period December 1978-February 1979. Its offering of subsidized passes seems to account for this result.

twenty-six months had a statistically undetectable influence on total pass sales and transit ridership during the oscillatory increase in total pass sales from 4,277 to 9,624 over the same period.

Although RT did mention in its promotional materials some of the ways that employers might benefit from helping their employees buy monthly bus passes (e.g., reduced costs for employee parking), detailed information concerning the costs and benefits to employers of greater employee use of transit for commuting was not given. Exposure to detailed cost-benefit information might have encouraged more employers to subsidize employee purchase of bus passes. For example, presentation of a detailed analysis showing the high cost of providing parking for employees (shown in Appendix F to typically be more than the cost of a monthly bus pass) might have provided an informational input to employers that would have led more of them to provide subsidized bus passes for their employees as a way to limit or reduce their implicit or explicit costs related to employee parking.

Why was the economic incentive of a 25% discount for three months needed to get Sacramento employers and employees interested in the "Monthly PASSpoRT" program when the employer-based sale of monthly passes appears, on the face of it, to offer so much convenience? The answer to this question seems to be that employer-based sales were perceived by most employers and employees to offer only a marginal improvement in convenience in a context of plentiful public sales outlets and the transit-using public's considerable prior experience with public-outlet purchase of monthly passes. In fact, in some cases the need to buy from one's employer on a payroll-deduction or subscription basis may have been perceived as decreased convenience relative to pass purchase at a public outlet.

The clearest single indication that the convenience of employer-based pass sales played a smaller role than economic incentives is the fact that pass sales by employers, even after fifteen months, had not returned to the levels achieved in November and December 1978 during the \$3 discount on monthly passes bought through participating employers. In December 1979 total pass sales were 6% higher while employer pass sales were 54% lower than in December 1978. By February 1980 total pass sales were 39% higher than in December 1978, but employer-sold passes were still 45% lower than in December 1978. Even by the end of the demonstration in June 1980, employee purchases of passes through their employers were 31% lower than in December 1978, although total pass sales (excluding the bulk purchase of 2,856 passes by the Sacramento County Welfare Department), were 34% above the level of December 1978.

For reasons apparently related to work and non-work factors and to lifestyle preferences, almost half of those who use the bus for work trips use transit less than five days a week. The dominant reason cited for not buying a monthly pass in both the first survey (70.2% of respondents) and the third survey (69.3% of respondents) was "Don't ride every day." This is basically an economic reason for not using the pass. A pass is not cost-effective relative to cash fares unless one is going to make more than a certain number of trips--known as the "breakeven" number of trips--during the month.

Until the fare increase of September 1, 1979, the breakeven point was 34.29 trips or, rounded up, 35 trips per month. On the basis of taking only work trips on transit, only five-day-a-week bus commuters would consistently save money using a monthly pass. After the fare increase, however, the breakeven number of trips dropped to 32 per month, because the regular fare increased by a greater percentage than the monthly pass. Thereafter the four-day-a-week commuter would consistently do as well or better, economically speaking, with a monthly pass as with daily passes. The fifteen-percent jump in PASSPORT program pass sales during the three months following September 1979, as compared to the three months before September 1979, correlates well with the fact that about 16% of bus users responding to both the first and third surveys were four-day-a-week transit users. Here again is evidence of the employee's responsiveness to the economic advantage of one alternative over another.

7.4 THE TRANSFERABILITY OF RESULTS

Some characteristics of the demonstration setting and of the demonstration's focus may tend to limit the transferability of the findings and conclusions contained in this report. Sacramento is the capital of the State of California. It lies in a broad, flat valley, and enjoys a mild winter and a hot, dry summer, so there are no major logistic or climatic obstacles to physical movement (except some heavy fog in winter and the heat of summer). The Sacramento area has twice as many government workers and one-third the number of manufacturing employees, per thousand persons employed, as the national average. The 18% bus mode share of Sacramento commuters at the start of the demonstration was twice the national average.

Exposure to transit fare prepayment was high among employees in the study area well before the demonstration began. With about half of transit-using employees utilizing some form of transit fare prepayment and close to one-third using a monthly pass, transit fare prepayment--and specifi-

cally the monthly pass--was neither novel nor inconvenient to obtain at the time the demonstration began. Thus, excluding the special case of the bulk pass purchase by the Welfare Department of the County of Sacramento,⁴ the relatively undramatic increase in pass sales effected by the introduction of the employer pass program in Sacramento will not necessarily extrapolate to other settings. Areas less familiar with or with less pre-existing access to monthly transit passes or other prepayment instruments would be expected to exhibit more dramatic responses to the introduction of an employer-based pass program--or a public-outlet pass program--than Sacramento employees did.

On the other hand, the findings and conclusions relative to the Sacramento demonstration are generally consonant with the results reported for the UMTA-sponsored TFP demonstrations in Austin, Texas and Phoenix, Arizona.⁵ For example, the evaluators of these demonstrations reported that:

- sales of TFP instruments rose dramatically during the discount period.
 - the main effect of the demonstration was to attract existing transit riders to TFP instruments.
 - only a few new riders were attracted to transit use.
 - new TFP buyers had a higher attrition rate than that of old buyers.
 - there was a slight increase in public awareness of transit and TFP instruments.
 - while increased sales of TFP instruments during the discount periods caused transit ridership to increase temporarily, they did not appear to increase transit ridership in the long run.
-

⁴ Starting with passes for March 1980, the Welfare Department began buying 2,400 to 3,000 passes per month for distribution to recipients of general assistance as part of the monthly aid package.

⁵ See Pamela Bloomfield and John Crain, Transit Fare Prepayment Demonstrations in Austin, TX and Phoenix, AZ, Crain & Associates, Menlo Park, California, June 1979 (Report No. UMTA-MA-06-0049-80-1), pages 1-6 and 131-136. As in Sacramento, the demonstrations in Austin and Phoenix involved price discounts on TFP instruments, advertising and promotion for the discount periods, and the expansion of the number of locations where TFP instruments could be bought.

- although some transit users may buy TFP instruments solely for convenience, the great majority of transit users will buy them only if they offer an economic advantage.
- a relatively high and continual turnover of TFP users means that a continuous marketing effort is required to keep TFP sales at a constant or growing level.
- marketing aimed directly at the transit user, e.g., advertising on buses, appears to be the most cost-effective approach.
- expansion of the existing network of TFP outlets could not be shown to have induced increases in the number of TFP instruments sold.⁶

To sum up, the evaluators of the Austin and Phoenix TFP demonstrations concluded (op. cit., page 138):

The results of these projects cast some doubt on the value of TFP programs as they are currently designed; i.e., they may not generate sufficient benefits to the rider, to the transit operator, or to the general public (by improving transit mode split) to justify their costs.

Although the small number of employers offering passes to their employees at a discount left basically unexamined the ability of discounted passes to draw commuters to transit over the long-term, the response of Sacramento employees to the three-month 25% discount on monthly passes and to the increased relative advantage of the monthly pass after the September 1979 fare increase demonstrates that they react swiftly and strongly to economic incentives.

Employees seek to keep their commuting costs at a minimum, employers want to cut the cost of providing employee parking and loss of employee time due to traffic congestion, and transit system operators want to increase ridership and revenues. Exhibit 7.1 cites some examples of new employer-based pass programs instituted through employer collaboration with transit system management to encourage employee use of public transit.

⁶ Again, with respect to the Sacramento demonstration, the only exception here is the case of the Welfare Department of the County of Sacramento. Apparently, it was the exposure to monthly passes afforded by the County's participation as an employer in the "Monthly PASSPORT" program that eventually led to the Welfare Department's purchase of passes for its recipients of general assistance.

Exhibit 7.1

SOME RECENTLY-ANNOUNCED EMPLOYER-BASED TRANSIT PASS PROGRAMS

"Columbus Firm Promotes Transit Use, Car Pools," *Passenger Transport*, vol. 38, no. 9 (Feb. 29, 1980), p. 12

Employer: Battelle's Columbus Laboratories

— more than 100 employees involved; 49 staff members have bought discount municipal bus passes

"Battelle buys monthly bus passes at regular rates and sells them to staff members at 20% less than the normal cost of \$22 for local and \$28 for express passes."

"APTA, DOT Join D.C. Pass Plan," *Passenger Transport*, vol. 38, no. 8 (Feb. 22, 1980), pp. 1, 9

Washington Metropolitan Area Transit Authority's transit pass program called Metro/Pool
First employer to join: American Public Transit Association (APTA)

Second employer to join: U.S. DOT

— new program launched February 13, 1980 to help area employers provide transit service as a fringe benefit instead of parking spaces.

TFP instrument: flash pass good for 2 weeks

"The new program enables employers to provide flash passes to employees through payroll deduction plans or other means. The convenient passes can be free to the employee, partially subsidized, or offered at full cost. At face value, they still offer significant dollar savings for the regular user."

"Passes Score in Dallas and Lincoln, Too," *Passenger Transport*, vol. 38, no. 3 (Jan. 18, 1980), p. 4

"Growing from only six employer participants two years ago, the Dallas Transit System employer discount pass program now has over 188 companies offering discounts to their employees who ride the bus to and from work. Employees can save a minimum of \$5 a month by purchasing their passes through a participating employer . . . the employer can purchase the pass from DTS at a \$2.50 discount provided it agrees to reduce the price to employees by an additional \$2.50 amount."

"Joining the growing pass program idea in the U.S. is Lincoln, Neb. . . . Beginning Jan. 1, all city and county employees were eligible to purchase the monthly LTS passports for \$6, with the city-county paying the other half of the cost. The monthly pass permits the employee to ride all regularly scheduled LTS buses during each month for as many trips as they desire. In January over 200 employees enrolled in the program, which is administered by payroll deduction."

"APTA Sets Transit Pass Clearinghouse," *Passenger Transport*, vol. 38, no. 3 (Jan. 18, 1980), pp. 1, 4

"APTA has set up a clearinghouse for employer transit pass plans, which have taken hold across the country. Information is being asked for from transit operators who currently maintain or are planning to institute employer-based programs . . . the clearinghouse will enable APTA members to benefit from experience gained and methods used in programs already initiated. In the plans, employers purchase transit passes, tickets, or tokens in bulk and resell them to employees at a discount rate or offer them free of charge."

A final comment on the transferability of the Sacramento TFP Demonstration results relates precisely to the almost dizzying increase in the number and variety of transit fare prepayment programs involving employers and their employees. With the cost and effort of automobile commuting increasing for employees, the cost of providing parking places increasing for employers, and the cost of running transit systems increasing for their operators, the partnership of employees, employers, and transit system operators is an idea whose time has come (again). Therefore, the most significant transferable result of the Sacramento demonstration may already have been made: namely, its example as an early working model of an employer-based pass program. Together with the MBTA (Boston) and PAT (Port Authority of Allegheny County) programs of pass sales through employers, the SRTD PASSpoRT program funded by UMTA's Service and Methods Demonstration Program may have accelerated the gestation, growth, and development of a new idea.

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EMPLOYER INFORMATION KIT

Welcome Aboard Regional Transit's
"MONTHLY PASSPORT"
Program!

It has been established that your company meets the necessary eligibility requirements to participate in an exciting Regional Transit Fare Prepayment Demonstration. The concept of this test program, funded in part by the Urban Mass Transportation Administration, is to provide benefits to both the employees and employers of pre-selected Sacramento Area businesses. Under the program, your employees can purchase a monthly bus pass through payroll deductions. As an employer, you also have the opportunity to offer the monthly passes to your employees as a fringe benefit - a benefit that becomes more valuable the more it is used.

Due to the nature of the demonstration, and in order for us to properly analyse its results, it will be necessary for you to strictly adhere to certain specific reporting and data collection procedures.

The demonstration portion of the program will last for twelve months after implementation, however, it is RT's intent to continue to offer the program beyond termination of the demonstration.

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II. DATES & ADDRESSES

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III. FORMS

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EMPLOYER ELIGIBILITY

Participants in the Regional Transit Fare Prepayment Program are selected on the following criteria:

1. Number of employees
2. Type of business
3. Geographic location (with RT service area)
4. Level of transit service to site
5. Availability to supply data, allow surveying of employees, and allow employees to purchase monthly bus passes through payroll deductions.

A GOOD TEST PROGRAM MUST HAVE GOOD GROUND RULES

This test program can only be successful if we have exact result information. We therefore, must ask each participating employer to understand and comply with the following procedures:

DATA REQUIREMENTS

To maintain records on pass sales, i.e., what administrative procedures you used, and what administrative costs you incurred. (Your own procedure may prove to be the most practical, and could be adopted as a national standard.) You must also agree to assist in the distribution and collection of four employee self-completion survey forms, and must agree to allow us to interview you periodically throughout the demonstration period.

ORDERING PASSES

All orders for Passes must be received by RT's Pass Program Office no later than the 15th day of the month preceding the ridership month. Orders that are a duplication of the previous months order must still be sent to the office as listed on the page.

DELIVERY OF PASSES

You will receive your filled order for passes by the 25th day of the month preceding the ridership month. EXAMPLE: Passes good for September ridership will be delivered to you on the 25th of August. The passes will be delivered by an RT messenger directly to the person you designate responsible for signing the order. Once your order is delivered, you will be liable for the passes until they are: (a) delivered to your employees; (b) returned to RT. We urge you to check your pass order each month immediately, to make sure all the passes you have ordered are contained in the package. If you should find a discrepancy, contact the Pass Program Office immediately.

RETURN OF PASSES

In the event of an error in your order, RT will accept and credit you for returned passes if: (a) RT received your returned passes no later than the first day of the ridership month, and (b) the passes are sent to the Pass Program Office by registered mail. (This will insure receipt and will protect you.)

PAYMENT PROCEDURE

Payment for monthly passes must be received by the first day of the ridership month. Two invoices will be enclosed with the passes when delivered to you. Payment, by company check, must be sent with one invoice to the RT Pass Program Office.

REFUNDS, REPLACEMENTS

Refunds cannot be made for Passes under any circumstances after the first day of the ridership month. Passes returned to the Pass Program Office by the first day of the ridership month will be credited to your account and will appear on your next invoice. Passes will not be replaced if lost or stolen. If internal procedures dictates that passes are mailed to employees, procedures must be set up insure receipt of passes. Remember - once you have accepted the order when delivered - you are liable from that point until the pass is delivered to the employee.

If you have any questions about these procedures, please telephone the Pass Program Office. We want to work with you to make the "MONTHLY PASSPORT" Program work.

For your convenience, we have included a list of key dates and important addresses.

KEY DATES

- | | |
|-------------------|--|
| 15th of the month | Deadline for receipt of your order. |
| 25th of the month | Your Passes for the next month will be delivered to you by this date. Passes may be picked up by employers earlier by calling 444-7591, Ext. 42. |
| 1st of the month | Your returned Passes (in the case of an error) must be received by the Pass Program Office for you to receive credit; this must be done by registered mail to insure proper receipt. |

IMPORTANT ADDRESSES

- | | |
|---|---|
| Regional Transit
Pass Program Office
1400 - 29th Street
Box 2110
Sacramento, CA 95810 | The Pass Program Office will receive your order. Also, please direct any Pass Program questions to this office. |
| Tel. 444-7591, Ext. 42 | Our Pass Program Office must receive your returned Passes by registered mail, to give you credit, no later than the first day of the month. |
| | They will process your payments for monthly Passes. Please send your company check, with one copy of your invoice, by registered mail to this address. Record your account number on your check each month. |

We ask that all employers establish their internal policies to comply with these procedures and key dates. Employees should be made aware of the importance associated with both RT and employer policies.

REGIONAL TRANSIT
"MONTHLY PASSPORT" PROGRAM ADMINISTRATOR
Administrator _____
Company Name _____

Please show this identification card when you sign for receipt of RT passes. If you have any questions about your order, please telephone 444-7591, Ext. 42 for assistance.

Signature of Administrator

Date



REGIONAL TRANSIT

P.O. Box 2110 · Sacramento, CA 95810
PHONE (916) 444 7591

Page ____ of ____
INVOICE NO.

SHIP TO:

IF DIFFERENT
THAN SOLD TO

SOLD
TO:
•

CUST PO No	ORDERED BY	TERMS	ORDER TAKEN BY	ORDER DATE
------------	------------	-------	----------------	------------

DESCRIPTION	QUANTITY	UNIT PRICE	EXTENSION
-------------	----------	------------	-----------

DELIVERED BY	DELIVERY DATE	RECEIVED BY	PROGRAM	PLEASE PAY THIS AMOUNT \$
--------------	---------------	-------------	---------	---------------------------

"MONTHLY PASSPORT" PROGRAM

Order Form

Date: _____

Company or Organization Name: _____

Total # of \$12 monthly passes _____

Total # of \$ 3 stickers _____

First-time enrollment to Pass Program _____

Please mail this form no later than the 13th of each month to the Pass Program Office. Payment is due upon receipt of invoice.

Signature of Administrator

"MONTHLY PASSPORT" PROGRAM

Change Notice

Date: _____

Name of Company: _____

Address change Administrator change

Tel. # change Fl./Rm. No. change

Effective date for change: _____

Requests for additional materials:

Application cards Posters

Quantity needed: _____

PLEASE TYPE OR PRINT IN CORRECT INFORMATION FOR OUR RECORDS. THANK YOU.

ADMINISTRATIVE REPORT

FOR THE MONTH OF: _____

DATE: _____

EMPLOYER NAME: _____

PAGE ____ OF ____

NUMBER OF PARTICIPATING EMPLOYEES: _____

	PAYROLL DEDUCTION ADMINISTRATION	DISTRIBUTION OF PASSES TO EMPLOYEES	EMPLOYER INTERVIEWS/ EMPLOYEE SURVEYS	OTHER COSTS (PLEASE SPECIFY)
PERSONNEL TIME & VALUE				
SUPPLIES				
OTHER (PLEASE SPECIFY)				

COMMENTS: _____



CITY OF SACRAMENTO

PHILLIP L. ISENBERG

Mayor

City Hall, Room 202
Sacramento, California 95814
(916) 449-5400

April 21, 1978

Beth F. Beach
Regional Transit
P. O. Box 2110
Sacramento, CA 95810

Dear Ms. Beach:

"A solid program of rapid mass transportation must ultimately come to metro cities like Sacramento. While the private automobile will always be a part of our lives, and rightly so, every citizen with a modicum of responsibility and farsightedness must realize that compromises have to be made.

The introduction of Regional Transit's new Test Demonstration is a step in the right direction. This program, implemented in cooperation with the Urban Mass Transportation Administration, is designed to increase individual ridership to and from places of employment. The program, called RT's "MONTHLY PASSPORT", gives employees the opportunity to purchase monthly bus passes at their place of employment, either by convenient payroll deduction, or straight, over the counter sales. The passes are good for unlimited bus ridership, and may be used by other members of the family. The pass, therefore, becomes more valuable, the more it is used.

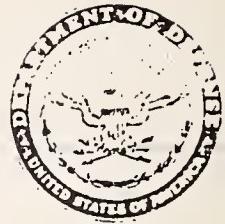
I support RT's "MONTHLY PASSPORT" Program. It is a sensible, feasible way to save energy, alleviate choked downtown parking and congested freeways. It will save participants money in automobile related costs and it may even eventually help curb rising automobile insurance rates. I sincerely hope that both private and governmental employers urge their employees to take advantage of this excellent new Regional Transit monthly bus pass program."

Sincerely,

A handwritten signature in black ink, appearing to read "Phillip L. Isenberg".

Phillip L. Isenberg
Mayor

lf



5 MAY 1978

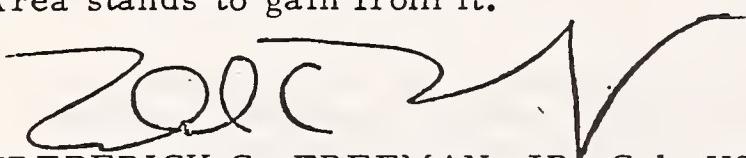
Ms Beth Beach, Project Manager
Regional Transit, Box 2010
Sacramento, California 95810

"As a Booster Committee Member of Regional Transit's new "MONTHLY PASSpoRT" Program, I urge private and governmental employers to make this program available to their employees.

Not only will the program make it much more convenient for individuals to ride the bus, it will do more to conserve our precious natural resources. If a good percentage of Sacramento Area citizens participated in the bus pass program, our freeways and congested parking areas would soon reflect a big change.

The program makes riding the bus a true convenience. It gives employees the opportunity to purchase monthly bus passes at their place of employment. Employees would no longer have to make a concerted effort to purchase monthly bus passes. The pass also gives the rider unlimited usage. So, in fact, the more the rider uses the pass, the more valuable it becomes. Unlike similar programs in other areas, usage of the pass is not restricted to the purchaser.

I hope Regional Transit's "MONTHLY PASSpoRT" Test Demonstration is an unqualified success. Every one of us who live in the Sacramento Area stands to gain from it."


FREDERICK C. FREEMAN, JR., Col, USAF
Base Commander



DEPARTMENT OF TRANSPORTATION

OFFICE OF DIRECTOR

1120 N STREET

SACRAMENTO, CALIFORNIA 95814

(916) 445-2200

May 24, 1978

Mr. Charles Thomas
General Manager
Sacramento Regional Transit District
P. O. Box 2100
Sacramento, CA 95814

Dear Mr. Thomas:

RT's program for monthly transit passes by payroll deduction is one of the most exciting new transit programs in California, if not in the nation. It is with considerable pleasure that Caltrans can be the sponsor for State employees in the Sacramento area. I know that the program will be successful and will become a model for other transit Districts throughout the State.

I am pleased to be invited to serve on the Employer's Pass Program Advisory Committee. To be sure that the State is always represented, I am designating Mr. George Gray, Chief, Division of Mass Transportation as my representative.

Sincerely,

A handwritten signature in cursive ink that reads "Adriana Gianturco".

ADRIANA GIANTURCO
Director of Transportation

MAY 31 1978

17-1111

LUNG ASSOCIATION OF SACRAMENTO - EMIGRANT TRAILS

REGIONAL TRANSIT

July 7, 1978

JUL 11 1978

MARKETING

Beth F. Beach
Project Manager
Regional Transit
P.O. Box 2110
Sacramento, California 95810

Dear Ms. Beach:

The Lung Association of Sacramento would like to extend its enthusiastic endorsement of Regional Transit's innovative "MONTHLY PASS-PORT" project.

Our members believe everyone in the Sacramento area stands to gain from this program and we will encourage all those we come in contact with to participate wherever possible.

RT's monthly pass is a real money-saver for bus passengers. It gives them unlimited use of RT services to and from work and on weekends. The automatic payroll deduction system being offered adds an extra element of convenience to the pass and gives employers an opportunity to participate in a substantial effort at dealing with the social and economic concerns of transportation.

It is our feeling that if employers actively support this program and a significant percentage of Sacramento-area citizens participate, we'll soon see marked progress toward cleaner air.

If we can be of assistance in the implementation of this important program, please let us know.

Sincerely,

Patrick Bell

Patrick Bell
President

PB:rf



SACRAMENTO SAFETY COUNCIL

3909 BRADSHAW ROAD, SACRAMENTO, CA. 95826 (916) 366-SAFE

July 24, 1978

Ms. Beth F. Beach
Project Manager
Regional Transit
P. O. Box 2110
Sacramento, CA 95810

Dear Ms. Beach:

I am pleased to announce that the Board of Directors of the Sacramento Safety Council has voted to give its full endorsement to Regional Transit's "MONTHLY PASSPORT" program.

The board members agreed this program is an important step toward public awareness of transit services and a strong way to increase RT ridership. They believe the effort will give Sacramento-area employers the opportunity to support mass transportation while simultaneously offering employees a convenient way to pay for that valuable monthly bus pass.

The program clearly has the ability to save participants money in comparison to automobile-related costs while helping to conserve the community's energy and to alleviate problems with congested freeways and downtown parking creating a safer environment.

Board members applaud this innovative program and offer their full support. If we can be of assistance in its implementation, please let us know.

Sincerely,

Kenneth B. Brown
Executive Vice President

KBB:MEK



SACRAMENTO MUNICIPAL UTILITY DISTRICT □ 6201 S Street, Box 15830, Sacramento, California 95813; (916) 452-3211

July 27, 1978

REGIONAL TRANSIT

MARKETING

Ms. Beth Beach
Project Manager
MONTHLY PASSPORT
Regional Transit
P. O. Box 2110
Sacramento, CA 95810

Dear Ms. Beach:

I wish to express my support for RT's new MONTHLY PASSPORT program. Participation in the program provides a good opportunity for Sacramentans--both employers and employees--to reduce energy waste and relieve traffic and parking congestion.

Many SMUD employees appreciate the convenience of purchasing the monthly bus pass at their place of work. They also find that the more they use their PASSPORT the more they save.

We encourage our employees to make use of this convenient, money-saving way to commute to and from work.

Sincerely,

A handwritten signature in cursive ink that reads "Wm. C. Walbridge".

Wm. C. Walbridge
General Manager

Ferry Hospital

411 J Street
SACRAMENTO, CALIFORNIA 95814

Phone 446-7220

July 28, 1978

Ms Beth Beach
Project Manager
MONTHLY PASSPORT
Regional Transit
P.O. Box 2110
Sacramento, Ca 95810

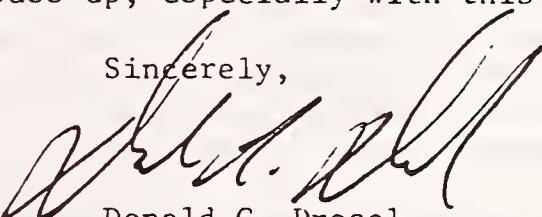
Dear Ms Beach:

In Sacramento we are indeed fortunate to have the services of an efficient mass transportation system. The support of this organization is paramount to saving energy and reducing traffic congestion. For those reasons alone, I urge all area employers to support RT's MONTHLY PASSPORT Program.

This program, implemented in cooperation with the Urban Mass Transportation Administration, hopes to increase individual ridership to and from work by giving employees the chance to purchase monthly bus passes at their place of employment. The more the pass is used, the more valuable the pass becomes. And usage is not limited to the purchaser:

Again, I support and urge employers to support RT's new MONTHLY PASSPORT Program. The convenience and efficiency of mass transportation is too good to pass up, especially with this new program.

Sincerely,


Donald G. Dresel
Administrator

DGD:mk

Edmund G. Brown Jr.

Governor



State of California
Health and Welfare Agency

California Unemployment Insurance Appeals Board

714 P STREET
SACRAMENTO, CALIFORNIA 95814

July 31, 1978

Ms. Beth Beach
Project Manager
MONTHLY PASSPORT
Regional Transit
P. O. Box 2110
Sacramento, California 95810

Dear Ms. Beach:

I take great pleasure in advocating the new MONTHLY PASSPORT Program initiated by Regional Transit. I think every employer and employee should encourage one another to support the new program as a contribution in the fight against energy waste and traffic congestion.

The convenience of obtaining a MONTHLY PASSPORT is a reflection of the efficiency RT has prided itself on the past few years. The program gives employees the opportunity to buy monthly bus passes where they work, either by convenient payroll deduction or over-the-counter sales. With unlimited usage during the month it is bought, the RT MONTHLY PASSPORT increases in value the more it is used. Also, unlike programs in other areas, the pass may be used by persons other than the purchaser.

I take pride in urging my fellow Sacramentans to support and participate in the RT MONTHLY PASSPORT Program. It is by far the best way to support your local public transportation system while saving energy and money.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard H. Marriott".

Richard Marriott
Former Mayor of Sacramento

WEINSTOCK'S

July 31, 1978

Ms. Beth Beach
Project Manager
MONTHLY PASSPORT
Regional Transit
P. O. Box 2110
Sacramento, California, 95810

Marketing

Dear Ms. Beach:

Traffic and parking congestion in downtown Sacramento has become a real problem which could be greatly alleviated by the use of Regional Transit. That's why I endorse Regional Transit's new MONTHLY PASSPORT program and urge employers to encourage participation by their employees.

The initiation of RT's new MONTHLY PASSPORT program is an effort by RT to encourage individual ridership to and from work. The program gives employees the opportunity to purchase monthly bus passes at their place of employment by convenient over-the-counter sales. Usage is not limited to the buyer, so the more the pass is used, the more valuable it becomes.

The MONTHLY PASSPORT program has my support, and I hope other employers also encourage support from their employees. It is an excellent RT program and will save money and energy.

Sincerely,

John Wochnick
John Wochnick (SAB)
Manager
Weinstock's - Florin Center

JW:ch



BANKOFAMERICA

A. B GILMAN

Senior Vice President

August 1, 1978

Ms. Beth Beach
Project Manager
MONTHLY PASSpoRT
Regional Transit
P. O. Box 2110
Sacramento, California 95810

Dear Ms. Beach:

As a Booster Committee member of Regional Transit's new MONTHLY PASSpoRT Program, I wholeheartedly encourage the development and participation in a mass transportation system in the Sacramento metropolitan area.

This program, implemented in cooperation with the Urban Mass Transportation Administration, will undoubtedly demonstrate the convenience and efficiency that riding the bus offers everyone. The MONTHLY PASSpoRT Program gives employees the chance to purchase monthly bus passes at their place of employment, either through a payroll deduction or through over-the-counter sales; and since usage of the pass is not limited to the purchaser, the more the pass is used, the more valuable it becomes.

Sensibly priced, convenient and energy efficient, the MONTHLY PASSpoRT Program saves users money and wear and tear on their automobiles. I strongly urge the support of this program through public and private sectors.

Sincerely,

ABG:bk



From the Office of the President

August 7, 1978

REC'D AUG 9 1978

Ms. Beth Beach
Project Manager
MONTHLY PASSPORT
Regional Transit
P.O. Box 2110
Sacramento, CA 95810

Dear Ms. Beach:

Sacramento is fortunate to have a progressive mass transportation system. Efficient, convenient and low cost, Regional Transit is helping to alleviate traffic congestion and energy consumption.

The latest effort to introduce more people to the benefits of RT is the initiation of the MONTHLY PASSPORT program. This program, implemented in cooperation with the Urban Mass Transportation Administration, is designed to encourage bus riding to and from places of employment. The program offers employees the chance to buy monthly bus passes at work, either through convenient payroll deduction or over-the-counter sales. The passes can be used by other members of the family as well.

Our Board of Directors has endorsed RT's MONTHLY PASSPORT program. It will make the mass transportation system more accessible. And, it will also support energy savings and environmental programs.

Sincerely,

A handwritten signature in cursive ink that reads "JECarpenter". Below the signature, the name "James E. Carpenter" is printed in a standard sans-serif font.

JEC:js



CALIFORNIA ALMOND GROWERS EXCHANGE
P. O. BOX 1768, SACRAMENTO, CALIFORNIA 95808

ROGER J. BACCIGALUPPI
PRESIDENT

August 11, 1978

Ms. Beth Beach
Project Manager
MONTHLY PASSPORT
Regional Transit
P.O. Box 2110
Sacramento, CA 95810

Dear Ms. Beach:

Transportation in the private sector has become a nationwide problem and any effort to mitigate the effects, such as depletion of energy and traffic problems, is a welcome change. That's why I endorse Regional Transit's new MONTHLY PASSPORT Program and urge employers to encourage participation by their employees.

MONTHLY PASSPORT gives employees the convenience of being able to purchase monthly bus passes from their employer through either a payroll deduction program or over-the-counter sales. In addition to giving the rider unlimited usage during the month, the use of the pass is not restricted to the purchaser. The more the pass is used, the more the pass is worth.

I hope Regional Transit's MONTHLY PASSPORT Program is successful. Without a doubt, we need to support this program.

Sincerely yours,

A handwritten signature consisting of stylized initials "RJB" and the surname "BACCIGALUPPI" written below it.

RJB/ss

COUNTY OF SACRAMENTO
OFFICE OF THE COUNTY EXECUTIVE



August 21, 1978

T. G. CAMPBELL
ACTING COUNTY EXECUTIVE

REGIONAL TRANSIT

AUG 22 1978

MARKETING

Ms. Beth F. Beach
Project Manager
Regional Transit
P. O. Box 2110
Sacramento, CA 95810

Dear Ms. Beach:

With the tremendous growth of Sacramento County, solutions to the increasing traffic congestion and air pollution levels must be found. Regional Transit has made effective progress in combating these problems, especially with its innovative MONTHLY PASSpoRT program.

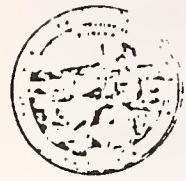
This program encourages bus ridership through an easy, convenient system for workers of purchasing bus passes through their place of employment. Not only do the participants in the MONTHLY PASSpoRT program save energy and avoid pollution, but they realize savings of close to \$200 a month in parking, fuel, insurance and car maintenance costs.

I endorse the MONTHLY PASSpoRT program, and I encourage all employers in Sacramento County to join me in supporting this worthy project. With its efficiency, convenience, energy saving, and environmental contribution, the program is a great benefit for all who live and work in the Sacramento area.

Very truly yours,

T.G.C.
T. G. Campbell
Acting County Executive

TGC:sm



State of California

GOVERNOR'S OFFICE
SACRAMENTO 95814

EDMUND G. BROWN JR.
GOVERNOR

916/445-4571

As natural resources diminish, programs encouraging citizens to conserve energy become more important. In offering passengers the opportunity to buy monthly bus passes, the "MONTHLY PASSpoRT" program provides added incentive for citizens to use public transportation. Through such conservation efforts, we can deal with possible future energy shortages and still maintain the quality of life we enjoy today.

Best wishes for success with the program.

Sincerely,

EDMUND G. BROWN JR.
Governor

FIRST SURVEY

Pre-Implementation Survey of All Employees Conducted April-September 1978

EMPLOYEE SURVEY

No 13580

ANY INFORMATION PROVIDED WILL BE HELD STRICTLY CONFIDENTIAL

1. HOW MANY DAYS PER WEEK DO YOU TRAVEL TO WORK BY EACH OF THE FOLLOWING WAYS:

<input type="checkbox"/> Drive alone	_____ days per week
<input type="checkbox"/> Drive with others	_____ days per week
<input type="checkbox"/> Bus	_____ days per week
<input type="checkbox"/> Walk or bicycle	_____ days per week
<input type="checkbox"/> Other _____	_____ days per week

2. BESIDES GOING TO AND FROM WORK, HOW MANY BUS TRIPS DO YOU NORMALLY MAKE IN A WEEK?
NOTE: Going to and from somewhere is two trips.

<input type="checkbox"/> 0 Trips	<input type="checkbox"/> 1 - 4 Trips	<input type="checkbox"/> 5 - 8 Trips	<input type="checkbox"/> 9 - 12 Trips
<input type="checkbox"/> 13 or more Trips			

NOTE: QUESTIONS 3, 4 and 5 SHOULD BE SKIPPED BY PERSONS WHO NEVER USE THE BUS.

3. HOW DO YOU NORMALLY GET TO THE BUS STOP FROM YOUR HOUSE?

<input type="checkbox"/> Walk	<input type="checkbox"/> Dropped off by car	<input type="checkbox"/> Drive	<input type="checkbox"/> Other (Specify): _____
-------------------------------	---	--------------------------------	---

4. HOW DO YOU NORMALLY PAY THE BUS FARE?

<input type="checkbox"/> Buy a monthly pass at	<input type="checkbox"/> The RT Kiosk at 9th & K Streets
<input type="checkbox"/> Other location (Specify): _____	
<input type="checkbox"/> Buy a daily pass	
<input type="checkbox"/> Pay cash each time using the bus	
<input type="checkbox"/> Use tokens	

5. IF YOU DO NOT USE A MONTHLY PASS, WHY NOT?

<input type="checkbox"/> Don't know about the monthly pass	<input type="checkbox"/> Don't know where to buy the monthly pass	
<input type="checkbox"/> Don't ride every day	<input type="checkbox"/> Inconvenient to buy it	<input type="checkbox"/> Afraid of losing it
<input type="checkbox"/> Don't want to pay for whole month at once	<input type="checkbox"/> Other (Specify): _____	

6. HOW LONG, ON THE AVERAGE, WOULD IT TAKE YOU TO TRAVEL TO WORK BY EACH OF THE FOLLOWING?

a. Auto: _____ minutes Don't know.
 b. Bus: _____ minutes Don't know. Number of transfers required: _____

7. HOW FAR DO YOU LIVE FROM THE NEAREST BUS STOP?

_____ blocks, or _____ miles Don't know.

8. WHAT IS THE ZIP CODE OF YOUR RESIDENCE? _____

9. DO YOU HAVE A VALID DRIVER'S LICENSE? Yes No

10. HOW MANY AUTOS ARE OWNED AND OPERATED BY MEMBERS OF YOUR HOUSEHOLD? _____

11. HOW MANY PEOPLE (INCLUDING YOURSELF) LIVE IN YOUR HOUSEHOLD? _____

INCLUDING YOURSELF, HOW MANY OF THE PEOPLE IN YOUR HOUSEHOLD WORK? _____

12. WHAT IS THE TOTAL ANNUAL INCOME OF YOUR HOUSEHOLD?

<input type="checkbox"/> Under \$10,000	<input type="checkbox"/> \$10,000 - \$14,999	<input type="checkbox"/> \$15,000 - \$19,999
<input type="checkbox"/> \$20,000 - \$24,999	<input type="checkbox"/> \$25,000 and over	

13. WHAT IS YOUR BIRTHDATE? (Month/Day/Year) ____/____/____

14. ARE YOU: Male Female

15. WHAT ARE YOUR NORMAL WORKING HOURS?

____ AM	____ PM	____ AM	____ PM	<input type="checkbox"/> No Regular Hours
____ : ____	____ : ____	____ : ____	____ : ____	

16. HOW MANY DAYS PER WEEK, ON THE AVERAGE, DO YOU WORK OVERTIME? _____

17. ARE YOU REQUIRED TO USE YOUR CAR AT WORK?

<input type="checkbox"/> Yes	How many days per week? _____
<input type="checkbox"/> No	

18. DO YOU NORMALLY WORK ON:
 a. Saturdays Yes No
 b. Sundays Yes No

THANK YOU FOR YOUR COOPERATION

SUMMARY OF SACRAMENTO PRE-IMPLEMENTATION SURVEY
(APRIL-SEPTEMBER 1978)

<u>Type of Firm</u>	Firms		Responses		<u>Sacramento County Employment (1970)^a</u>
	<u>Number</u>	<u>%</u>	<u>Number</u>	<u>%</u>	
Government (State)	11	33.3%	2,367	46.1%	
Government (Federal)	2	6.1%	592	11.5%	
Government (Local)	2	6.1%	730	14.2%	
Public Utility & Transportation	1	3.0%	443	8.6%	7.6%
Service (Finance)	5	15.2%	226	4.4%	5.4%
Service (Health)	2	6.1%	219	4.3%	5.5%
Other Services (education, business, etc.)	4	12.1%	80	1.6%	21.0%
Manufacturing	2	6.1%	332	6.5%	9.3%
Retail Trade	3	9.1%	110	2.1%	17.1%
Wholesale	1	3.0%	37	0.7%	4.1%
Other Industries	-	-	-	-	9.3%
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	33	100.0%	5,136	100.0%	100.0%

	<u>Total Response</u>	<u>Range by Employer</u>
<u>Survey Response Rate</u>	23.9%	5.3% - 90.0%
Surveys Delivered: 21,482		
Surveys Returned: 5,136		

a. Civilian labor force only.

b. Public administration only, excludes government services such as health, education, etc. 35.2% of the Sacramento County labor force is employed by the government.

<u>Variable</u>	<u>Total Survey Response</u>	<u>Sacramento County (1970)</u>	Range for firms with more than 30 responses to question
<u>I. DEMOGRAPHIC CHARACTERISTICS</u>			
<u>Sex</u>	(n=4945)		
Male	51.2%	60.8% ^c	7.0% - 75.8%
Female	48.8%	39.2% ^c	24.2% - 93.0%
<u>Age</u>	(n=4489)		
Under 30	24.1%		
30-39	26.8%		
40-49	23.3%		
50-59	21.1%		
60 and over	4.7%		
Mean	39.8 years		30.2 - 45.7
<u>Annual Household Income</u>	(n=4538)		
Under \$10,000	11.7%		4.3% - 34.4%
\$10,000-\$14,999	16.3%		
\$15,000-\$19,999	16.3%		
\$20,000-\$24,999	19.3%		
\$25,000 and over	36.4%		14.8% - 52.6%
<u>Licensed Drivers</u>	(n=5088)		
Licensed	96.3%		64.7% - 100 %
Not Licensed	3.7%		0% - 35.3%
<u>Auto Ownership</u>	(n=5064)		
0 cars	1.9%	10.7%	0% - 15.6%
1 car	31.6%	44.7%	
2 cars	47.1%	36.5%	
3 or more cars	19.5%	8.1%	8.2% - 32.5%
Mean	1.91	1.44	1.56 - 2.12
<u>Household Size</u>	(n=5034)		
1 person	14.8%	17.6%	9.1% - 23.0%
2 persons	33.3%	29.1%	
3 persons	19.5%	17.4%	
4 persons	18.7%	16.6%	
5 or more persons	13.8%	19.4%	6.1% - 22.6%
Mean	2.90	3.11	2.61 - 3.14
<u>Household Workers</u>	(n=4817)		
1 person	38.2%		22.2% - 49.0%
2 persons	48.2%		
3 or more persons	13.5%		6.0% - 20.0%
Mean	1.80	1.19 ^d	1.58 - 2.08

c. Labor Force Only

d. Calculated by dividing total number of workers by total households.

<u>Variable</u>	<u>Total Survey Response</u>	<u>Sacramento County (1970)</u>	<u>Range for firms with more than 30 responses to question</u>
<u>Autos per Person</u>	(n=5005) 0.76	0.46 ^e	0.67 - 0.84
<u>Autos per Worker</u>	(n=4791) 1.16	1.21 ^e	0.94 - 1.30
<u>Workers & Autos</u>	(n=4791)		
More Workers than Autos	15.6%		6.4% - 27.7%
Same Number of Workers as Autos	59.1%		
More Autos than Workers	25.3%	*	12.1% - 34.7%

II. WORK & WORK TRIP CHARACTERISTICS

<u>Number of Days Worked Per Week</u>	(n=5118)	
Less than 5	2.9%	0% - 14.9%
Five	96.6%	
More than 5	0.5%	0% - 2.1%
Mean	4.96	4.81 - 5.00
<u>Hours When Work Starts</u>	(n=4947)	
6 A.M.-6:59 A.M.	3.1%	
7 A.M.-7:59 A.M.	53.3%	
8 A.M.-8:59 A.M.	37.8%	
9 A.M.-9:59 A.M.	1.3%	
Other Times	3.7%	
Variable Hours	0.8%	
<u>Hours When Work Ends</u>	(n=4947)	
3 P.M.-3:59 P.M.	16.8%	
4 P.M.-4:59 P.M.	46.8%	
5 P.M.-5:59 P.M.	29.4%	
6 P.M.-6:59 P.M.	1.7%	
Other Times	4.5%	
Variable Hours	0.8%	
<u>Percent Working on Saturday</u>	(n=4605)	
	7.5%	0% - 50.6%
<u>Percent Working on Sunday</u>	(n=4393)	
	4.2%	0% - 55.6%

e. Calculated by dividing total number of autos by total population or workers.

	<u>Total Survey Response</u>	<u>Range For Firms With More Than 30 Responses</u>
<u>Average Number of Days Per Week Car Used At Work</u>	(n=5088)	
0	1.3%	
1	2.4%	
2	1.4%	
3	0.7%	
4	0.2%	
5	2.2%	
6 or 7	0.2%	
Variable	1.8%	
Car Not Used At Work	89.8%	70.8% - 100%
<u>Average Number of Days Per Week Worked Overtime</u>	(n=4615)	
0	72.6%	47.0% - 100%
1	9.6%	
2	5.9%	
3	3.3%	
4	1.7%	
5	3.6%	
6 or 7	0.2%	
Variable	3.3%	
<u>Perceived Auto Travel Time</u>	(n=4985)	
Mean	19.0 minutes	16.9 - 24.3
Percent Who Don't Know	0.9%	0% - 2.4%
<u>Perceived Bus Travel Time</u>	(n=2594)	
Mean	39.1 minutes	31.8 - 54.4
Percent Who Don't Know	39.7%	7.6% - 74.5%
<u>Perceived Level of Service Ratio</u>	(n=2521)	
(Bus Travel Time/Auto Travel Time)		
Mean	2.30	1.71 - 3.60
<u>Number of Transfers Required For Bus Trip</u>	(n=1900)	
0	73.0%	8.9% - 97.0%
1	17.5%	
2	7.8%	
3 or more	1.7%	
Mean	0.39	0.03 - 1.36
<u>Work Trip Mode Shares</u>	(n=5125) Sacramento Co. (1970)	
Drive Alone	49.9% }	26.7% - 83.4%
Drive With Others	26.8% 90.6%	9.2% - 47.0%
Bus	17.9%	1.8% - 49.3%
Walk or Bicycle	3.4%	0% - 13.3%
Other Modes	2.1%	0% - 4.7%

	<u>Total Survey Response</u>	<u>Range For Firms With More Than 30 Responses</u>
<u>Number of Days Bus Used</u>	(n=5125)	
0	77.5%	
1	2.0%	
2	2.6%	
3	2.1%	
4	3.5%	
5	12.3%	

III. TRANSIT ACCESS & USAGE

<u>Number of Blocks From Bus Stop</u> (12 blocks per mile assumed)	(n=4463)	
Mean	8.8	2.9 - 15.1
Percent within 3 blocks or 1/4 mile (0.4 kilometer)	62.3%	51.9% - 77.5%
Percent not knowing distance	11.8%	1.9% - 26.6%
<u>Number of Nonwork Bus Trips Taken Per Week</u>	(n=5033)	
0	88.6%	70.5% - 97.4%
1-4	7.0%	
5-8	2.1%	
9-12	1.6%	
13 or more	0.6%	
<u>Access Mode To Bus Stop</u> (Multiple responses permissible)	(n=1478)	
Walk	80.6%	72.5% - 90.0%
Dropped off	7.2%	0% - 9.8%
Drive	14.3%	3.4% - 22.6%
Other	1.3%	0% - 5.0%
<u>Normal Type of Fare Payment</u> (Multiple responses permissible)	(n=1447)	
Monthly Pass	31.9%	8.9% - 45.2%
Daily Pass	15.8%	6.5% - 26.8%
Cash	52.0%	40.4% - 66.1%
Tokens	5.2%	0% - 13.3%

	<u>Total Survey Responses</u>	<u>Range For Firms With More Than 30 Passengers</u>
<u>Pass Purchase Location</u>	(n=395)	
RT Kiosk	53.7%	
RT Main Office	1.0%	
CALTRANS	17.7%	
Water Resources Building	4.3%	
Macy's	8.6%	
Weinstock's (5 locations)	12.9%	
Through Employer	1.5%	
Other	0.3%	
<u>Reasons For Not Using Pass</u> (Multiple responses permitted)	(n=1048)	
Don't know about pass	3.1%	
Don't know where to buy pass	3.2%	
Don't ride every day	70.2%	
Inconvenient to buy	8.9%	
Fear of loss	2.6%	
Dislike large cash outlay	10.9%	
Other reasons	15.3%	

APPENDIX D
SECOND SURVEY

December 1978 Pass Purchaser Survey at
Employers Starting Pass Sales in October-November 1978

EMPLOYEE SURVEY

PLEASE COMPLETE SURVEY AND RETURN IN PREPAID ENVELOPE
ANY INFORMATION PROVIDED WILL BE HELD STRICTLY CONFIDENTIAL

No 33685

1. WHO WILL BE THE MAIN USER OF THE BUS PASS THAT YOU HAVE BOUGHT THIS MONTH?
 Yourself Another member of your family (Skip to question 3)
 Other (Skip to question 3)
2. WHEN DID YOU FIRST START USING A MONTHLY BUS PASS?
 This month (December) November 1978 October 1978
 September 1978 August 1978 July 1978
 June 1978 May 1978 Before May 1978
3. HOW MANY DAYS PER WEEK DO YOU TRAVEL TO WORK BY EACH OF THE FOLLOWING WAYS:
 Drive alone _____ days per week
 Drive with others _____ days per week
 Bus _____ days per week
 Walk or bicycle _____ days per week
 Other _____ days per week
4. HOW LONG, ON THE AVERAGE, WOULD IT TAKE YOU TO TRAVEL TO WORK BY EACH OF THE FOLLOWING?
a. Auto: _____ minutes Don't know
b. Bus: _____ minutes Don't know Number of transfers required? _____
5. BESIDES GOING TO AND FROM WORK, HOW MANY BUS TRIPS DO YOU NORMALLY MAKE IN A WEEK?
NOTE: Going to and from somewhere is two trips.
 0 Trips 1-4 Trips 5-8 Trips 9-12 Trips 13 or more Trips
6. HOW DO YOU NORMALLY GET TO THE BUS STOP FROM YOUR HOUSE?
 Walk Dropped off by car Drive Other Specify: _____
7. HOW FAR DO YOU LIVE FROM THE NEAREST BUS STOP?
_____ blocks, or _____ miles Don't know
8. WHAT IS THE ZIP CODE OF YOUR RESIDENCE? _____
9. DO YOU HAVE A VALID DRIVER'S LICENSE? Yes No
10. HOW MANY AUTOS ARE OWNED AND OPERATED BY MEMBERS OF YOUR HOUSEHOLD? _____
11. HOW MANY PEOPLE (INCLUDING YOURSELF) LIVE IN YOUR HOUSEHOLD? _____
INCLUDING YOURSELF, HOW MANY OF THE PEOPLE IN YOUR HOUSEHOLD WORK? _____
12. WHAT IS THE TOTAL ANNUAL INCOME OF YOUR HOUSEHOLD?
 Under \$10,000 \$10,000 - \$14,999 \$15,000 - \$19,999
 \$20,000 - \$24,999 \$25,000 and over
13. WHAT IS YOUR BIRTHDATE? (Month/Day/Year): _____/_____/'_____
14. ARE YOU: Male Female
15. WHAT ARE YOUR NORMAL WORKING HOURS?
_____:_____^{AM} TO _____:_____^{PM} AM PM No Regular Hours
16. HOW MANY DAYS PER WEEK, ON THE AVERAGE, DO YOU WORK OVERTIME? _____
17. ARE YOU REQUIRED TO USE YOUR CAR AT WORK? Yes How many days per week? _____
 No
18. DO YOU NORMALLY WORK ON:
a. Saturdays Yes No
b. Sundays Yes No

THANK YOU FOR YOUR COOPERATION

SECOND SURVEY

December 1978 Pass Purchaser Survey at Employers Starting Pass Sales in May-September 1978

EMPLOYEE SURVEY

PLEASE COMPLETE SURVEY AND RETURN IN PREPAID ENVELOPE
ANY INFORMATION PROVIDED WILL BE HELD STRICTLY CONFIDENTIAL

No 30086

1. WHO WILL BE THE MAIN USER OF THE BUS PASS THAT YOU HAVE BOUGHT THIS MONTH?

- Yourself Another member of your family (skip to question 3)
 Other (Skip to question 3)

2. WHEN DID YOU FIRST START USING A MONTHLY BUS PASS?

- This month (December) November 1978 October 1978
 September 1978 August 1978 July 1978
 June 1978 May 1978 Before May 1978

2a. IN WHICH MONTH DID YOU FIRST BUY A PASS AT WORK? _____

3. HOW MANY DAYS PER WEEK DO YOU TRAVEL TO WORK BY EACH OF THE FOLLOWING WAYS:

- Drive alone _____ days per week
 Drive with others _____ days per week
 Bus _____ days per week
 Walk or bicycle _____ days per week
 Other _____ days per week

3a. HOW DID YOU TRAVEL TO WORK BEFORE OCTOBER 1978 (BEFORE THE \$3 BUS PASS DISCOUNT BEGAN)?

- Same as above Did not work then
 Drove alone Drove with others
 Bus Walk or bicycle Other _____

4. HOW LONG, ON THE AVERAGE, WOULD IT TAKE YOU TO TRAVEL TO WORK BY EACH OF THE FOLLOWING?

- a. Auto: _____ minutes Don't know
b. Bus: _____ minutes Don't know Numbers of transfers required: _____

5. BESIDES GOING TO AND FROM WORK, HOW MANY BUS TRIPS DO YOU NORMALLY MAKE IN A WEEK?
NOTE: Going to and from somewhere is two trips.

- 0 Trips 1-4 Trips 5-8 Trips 9-12 Trips 13 or more Trips

6. HOW DO YOU NORMALLY GET TO THE BUS STOP FROM YOUR HOUSE?

- Walk Dropped off by car Drive Other (Specify): _____

7. HOW FAR DO YOU LIVE FROM THE NEAREST BUS STOP?

_____ blocks, or _____ miles Don't know

8. WHAT IS THE ZIP CODE OF YOUR RESIDENCE? _____

9. DO YOU HAVE A VALID DRIVER'S LICENSE? Yes No

10. HOW MANY AUTOS ARE OWNED AND OPERATED BY MEMBERS OF YOUR HOUSEHOLD? _____

11. HOW MANY PEOPLE (INCLUDING YOURSELF) LIVE IN YOUR HOUSEHOLD? _____
INCLUDING YOURSELF, HOW MANY OF THE PEOPLE IN YOUR HOUSEHOLD WORK? _____

12. WHAT IS THE TOTAL ANNUAL INCOME OF YOUR HOUSEHOLD?

- Under \$10,000 \$10,000 - \$14,999 \$15,000 - \$19,999
 \$20,000 - \$24,999 \$25,000 and over

13. WHAT IS YOUR BIRTHDATE? (Month/Day/Year): _____

14. ARE YOU: Male Female

15. WHAT ARE YOUR NORMAL WORKING HOURS:

_____:____ AM TO _____:____ PM AM No Regular Hours

16. HOW MANY DAYS PER WEEK, ON THE AVERAGE, DO YOU WORK OVERTIME? _____

17. ARE YOU REQUIRED TO USE YOUR CAR AT WORK? Yes How many days per week? _____
 No

18. DO YOU NORMALLY WORK ON:
a. Saturdays Yes No
b. Sundays Yes No

THANK YOU FOR YOUR COOPERATION

SURVEY SAMPLE SIZES AND RESPONSE RATES

	<u>Employers Participating In Both Surveys (n=33; starting in May- October 1978)</u>	<u>Employers Participating In Second Survey Only (n=18; starting in November 1978)</u>	<u>TOTAL</u>
<u>Total Employees (estimate)</u>	39,000	10,000	49,000
<u>1st Surveys Distributed (All employees; samples at large firms)</u>	21,442	-	21,442
<u>1st Survey Response</u>	5,113	-	5,113
% of Surveys Distributed	23.8%	-	23.8%
<u>December Pass Purchasers and Number of 2nd Surveys Distributed</u>	1,501	1,301	2,802
<u>2nd Survey Response</u>	946	849	1,795
% of Surveys Distributed	63.0%	65.3%	64.1%
<u>1st and 2nd Survey Matched Responses (by birthdate, employer, and zip code)</u>	277	-	277
% of 2nd Survey Response	29.3%	-	15.4%

D.1 OVERALL RESULTS

SACRAMENTO DEMONSTRATION PASS PURCHASER SURVEY RESULTS

Survey Response

Passes Sold:	2,773
Surveys Returned:	1,795
Response Rate:	64.7%

I. Demographic Characteristics

<u>Sex</u>	(n=1751)
Male	43.7%
Female	56.3%
<u>Age</u>	(n=1633)
Under 30	23.3%
30-39	23.8%
40-49	22.8%
50-59	23.9%
60 and Over	6.1%
Mean	40.7 years
<u>Annual Household Income</u>	(n=1680)
Under \$10,000	13.1%
\$10,000 - \$14,999	20.9%
\$15,000 - \$19,999	15.4%
\$20,000 - \$24,999	19.1%
\$25,000 and Over	31.5%
<u>Licensed Drivers</u>	(n=1785)
Licensed	90.1%
Not Licensed	9.9%
<u>Auto Ownership</u>	(n=1779)
0 Cars	7.0%
1 Car	40.5%
2 Cars	37.9%
3 or More Cars	14.6%
Mean	1.65

<u>Household Size</u>	(n=1764)
1 Person	16.0%
2 Persons	33.7%
3 Persons	19.4%
4 Persons	18.6%
5 or More Persons	12.2%
Mean	2.84
<u>Household Workers</u>	(n=1531)
1 Person	43.2%
2 Persons	44.5%
3 or More Persons	12.3%
Mean	1.73
<u>Autos Per Person (Mean)</u>	(n=1757) 0.65
<u>Autos Per Worker (Mean)</u>	(n=1526) 1.03
<u>Workers and Autos</u>	(n=1526)
More Workers than Autos	26.5%
Same Number of Workers As Autos	53.1%
More Autos than Workers	20.3%

II. Work and Work Trip Characteristics

<u>Number of Days Worked Per Week</u>	(n=1785)
Less than 5	1.7%
Five	97.6%
More than 5	0.6%
Mean	4.98
<u>Hours When Work Starts</u>	(n=1765)
7 AM - 7:59 AM	53.2%
8 AM - 8:59 AM	41.8%
Other Times	4.4%
Variable Hours	0.6%

<u>Hours When Work Ends</u>	(n=1765)
3 PM - 3:59 PM	9.2%
4 PM - 4:59 PM	61.1%
5 PM - 5:59 PM	26.9%
Other Times	2.2%
Variable Hours	0.6%
<u>Percent Working on Saturday</u>	(n=1769) 3.1%
<u>Percent Working on Sunday</u>	(n=1665) 1.1%
<u>Average Number of Days Per Week Car Used at Work</u>	(n=1770)
1 - 2	1.2%
2 or More	0.6%
Variable	0.6%
Car Not Used at Work	97.5%
<u>Average Number of Days Per Week Worked Overtime</u>	(n=1675)
0	82.0%
1	9.2%
2	3.5%
3 or 4	2.1%
5 or 6	1.7%
Variable	1.4%
<u>Perceived Auto Travel Time</u>	(n=1640)
Mean	22.1 Minutes
Percent Who Don't Know	3.7%
<u>Perceived Bus Travel Time</u>	(n=1737)
Mean	33.2 Minutes
Percent Who Don't Know	1.0%

<u>Perceived Level of Service</u>	
<u>Ratio (Bus Travel Time/Auto Travel Time)</u>	(n=1601)
0 - 1.00	6.9%
1.00 - 1.99	65.3%
2.00 - 2.99	22.2%
3.00 - 3.99	4.1%
4.00 and Over	1.5%
Mean	1.66
<u>Number of Transfers Required</u>	
<u>For Bus Trips</u>	(n=1316)
0	88.8%
1	9.3%
2	1.7%
3	0.2%
Mean	0.13
<u>Work Trip Mode Shares,</u>	
<u>Weighted by Number of Days</u>	
<u>Each Mode Used</u>	(n=1785)
Drive Alone	5.1%
Drive With Others	1.7%
Bus	92.1%
Walk or Bicycle	0.8%
Other Modes	0.4%
<u>Number of Days Bus Used</u>	(n=1785)
0	3.2%
1	0.3%
2	1.3%
3	3.9%
4	11.9%
5	79.2%
6	0.3%
Mean	4.60 Days

Percentage of Respondents Using the Bus For
Commuting at Least One Day a Week Before
October and During December (Employers
Where Passes Were Sold Before October) (n=327)

<u>Before October</u>	<u>December</u>
77.1%	95.1%

Previous Work Trip Mode Shares Before October
and During December; Unweighted by Number of
Days Each Mode Used; Weighted Data Unavailable
(Employers Where Passes Were Sold Before
October 1978) (n=327)

	<u>Before October</u>	<u>December</u>
Did Not Work Before October	0.8%	-
Drove Alone	20.6%	11.9%
Drove With Others	7.2%	3.6%
Bus	67.4%	80.8%
Walked or Biked	2.9%	2.3%
Other Mode	1.1%	1.3%

III. Transit Access and Usage

Number of Blocks From Bus Stop
(Twelve Blocks Per Mile
Assumed) (n=1774)

0 - 3	63.2%
4 - 6	19.6%
7 - 12	8.6%
Over 12 Blocks	8.7%
Mean	6.7 Blocks
Percent Not Knowing Distance	0.7%

Number of Nonwork Bus Trips
Taken Per Week (n=1768)

0	71.2%
1 - 4	19.6%
5 - 8	4.1%
9 - 12	4.0%
13 or More	1.1%

Access Mode to Bus Stop
(Multiple Responses Permissible) (n=1792)

Walk	74.7%
Dropped Off	9.7%
Drive	18.5%
Other	0.6%

Primary User of Pass (n=1786)

Self	98.0%
Other Family Member	1.9%
Non-Family Person	0.1%

Date Monthly Pass First Bought (n=1750)

December	6.4%
November	17.1%
October	13.3%
September	5.8%
August	3.1%
July	2.1%
June	2.2%
May	2.5%
Before May	47.5%

<u>Date Monthly Pass First Bought at Employer (Employees Where Passes Were Sold Before October)</u>	(n=285)
December	6.0%
November	15.8%
October	25.3%
September	16.8%
August	7.0%
July	5.3%
June	4.9%
May	4.9%
Before May	14.0%

D.2 MATCHED-RESPONSE RESULTS

TRAVEL BEHAVIOR CHARACTERISTICS OF MATCHED RESPONSES;
RESPONDENTS ANSWERING 1st AND 2nd SURVEYS (n=277)

<u>Normal Type of Transit Fare Payment Before Pass Sales</u> (Multiple Responses Permitted)	<u>Before</u> (n=277)	
Monthly Pass	56.7%	
Daily Pass	10.8%	
Cash	21.3%	
Tokens	5.4%	
Didn't Use Bus	8.7%	
<u>Number of Days Bus Used For Commuting</u> Before and After Pass Sales	<u>Before</u> (n=276)	<u>After</u> (n=276)
0	8.3%	2.2%
1	1.1%	0.4%
2	2.2%	0.4%
3	4.0%	2.9%
4	12.0%	15.2%
5	72.5%	79.0%
Mean	4.28	4.66
<u>Changes In Number of Days Bus Used For Commuting</u>	(n=275)	
5 Days Less	0.7%	
2 Days Less	0.4%	
1 Day Less	5.1%	
No Change	78.2%	
1 Day More	5.5%	
2 Days More	1.5%	
3 Days More	1.8%	
4 Days More	0.7%	
5 Days More	6.2%	
Mean	0.38 Days More	

Number of Nonwork Bus Trips Made
Per Week

	<u>Before</u> (n=274)	<u>After</u> (n=274)
0	71.5%	68.4%
1 - 4	17.9%	24.0%
5 - 8	4.4%	4.4%
9 - 12	5.8%	3.3%
13 or More	0.4%	0.0%

Change in Number of Nonwork Bus Trips (n=272)

Fewer Trips	12.9%
Same Category	72.8%
More Trips	14.3%

Mean Perceived Auto Travel Time (Minutes)

	<u>Before</u> (n=250)	<u>After</u> (n=259)
	21.7	21.8

Mean Perceived Bus Travel Time (Minutes)

	<u>Before</u> (n=253)	<u>After</u> (n=270)
	33.9	34.0

Change In Perceived Auto Time

More Than 5 Minutes Less	5.4%
5 Minutes Less	13.6%
1 - 4 Minutes Less	7.0%
No Change	43.8%
1 - 4 Minutes More	7.4%
5 Minutes More	16.9%
More Than 5 Minutes More	5.8%
Mean	0.3 Minutes More

Change In Perceived Bus Time

	(n=247)
More Than 5 Minutes Less	9.3%
5 Minutes Less	12.1%
1 - 4 Minutes Less	5.3%
No Change	38.5%
1 - 4 Minutes More	6.5%
5 Minutes More	14.2%
More Than 5 Minutes More	14.2%
Mean	0.5 Minutes More

Note: The following results of matched responses need to be interpreted in the light of a probable bias which overestimates previous transit usage. Such a bias is suspected because of rather large differences in the corresponding "Before" results (see page D-9) obtained for all respondents to Question #3a (n=327) of the second survey. It is possible that persons who were transit users at the time of the first survey were more likely to return that survey than non-users of transit, particularly since the first survey was distributed with a cover letter from the Sacramento Regional Transit District. A discussion of how the bias has been estimated follows the survey results presented below.

Percent of Persons Using the Bus At Least One Day
A Week Before Project, Before Discount and
During Discount (Employers Where Passes Were
Sold Before October; n=80)

<u>Before Project</u>	<u>Before Discount</u>	<u>During Discount</u>
83.5	86.3%	95.0%

Mode Shares Before Project, Before Discount and
During Discount; Unweighted by Number of Days
Each Mode Used; Weighted Data Unavailable
(Employers Where Passes Were Sold Before
October 1978; n=80)

	<u>Before Project</u>	<u>Before Discount</u>	<u>During Discount</u>
Drove Alone	12.9%	15.5%	10.5%
Drove With Others	12.9%	8.2%	4.2%
Bus	71.0%	71.1%	80.0%
Walked or Biked	2.2%	5.2%	4.2%
Other Modes	1.1%	0.0%	1.1%

Commuting Mode Shares, Weighted by Number of
Days Each Mode Used (All matched responses)

	<u>Before (n=276)</u>	<u>After (n=276)</u>
Drive Alone	7.5%	3.7%
Drive With Others	4.0%	1.3%
Bus	86.3%	93.4%
Walking or Bicycling	1.8%	1.5%
Other	0.4%	0.1%

Estimation of Response Bias

Of the 327 respondents to Question #3a, 77.1% said they commuted by bus (though not necessarily every day) before October; 95.1% of the same group (n=327) rode the bus in December, an increase of 18% (see Page D-9). Among those respondents to Question #3a who were matched across the two surveys (n=80), however, the shift was only from 86.3% to 95.0%, an increase of 8.7%. The unmatched responses, of which there were three times as many (n=247), had a 20.6% gain in bus use between before October and in December. These results indicate that the matched responses were biased toward including relatively too many persons who used transit before the demonstration.

Taking into account both the matched responses (n=276) for employees of Employers 1-34 and all the survey responses (n=1785) from Employers 1-52 (see page D-8), the second employee survey suggests that the percentage of commute trips made by bus (bus mode share) increased in absolute terms between 15 and 20 percent (and in relative terms between 19 and 28 percent). The uncertainty is due to not knowing the bus mode share before the discount period for work trips made by all employees responding to the second survey. As seen in the lower portion of the preceding page, the bus mode share for those respondents whose first and second surveys could be matched (n=276) increased from 86.3% to 93.4%, an absolute gain of 7.1% (and an 8.2% gain relative to the base figure of 86.3%). As in the case of the percent of respondents using transit for commuting at least one day a week (upper portion of preceding page, one suspects that the matched responses underestimate the increase in transit mode share between the "before discount" and "during discount" periods. To confirm this suspicion, one needs to have a basis for estimating the missing "before discount" bus mode share for all responding employees of Employers 1-52.

First, we note that the bus mode share is closely related (highly correlated) with the percent of respondents using transit for commuting at least one day a week. It is sheer coincidence, however, that for the matched responses both turned out to be 86.3%. (Note that the sample populations were not identical.) Generally, the bus mode share is somewhat lower than the percent of people using the bus for commuting at least once a week. For example, as shown on Page D-8, the responses of employees of all 52 employers to the second employee survey showed a bus mode share during the discount period of 92.1%; the percent of respondents using the bus for commuting at least once a week during the discount period was 96.8%. If one considers the total responses to Question #3a from employees of Employers 1-17 as more or less representative of the responses that would

have been obtained from employees of Employers 1-52, then the 77.1% obtained as the percent of respondents using the bus for commuting at least one day a week before the discount period can be considered as the upper limit for the "before discount" bus mode share of all employees buying December passes through Employers 1-52. Therefore, the lower limit on the absolute change in bus mode share would be $92.1\% - 77.1\% = 15.0\%$ (a relative increase of $15.0/77.1 = 19.5\%$). If one calculates the ratio

$$\frac{\text{Bus mode share}}{\% \text{ of respondents using bus for commuting at least once weekly}}$$

considering all 1,785 responses to the second survey applicable to the discount period, the result is $92.1/96.8 = 0.95$. Using this fraction to discount the percent of respondents using the bus for commuting at least one day a week used above (77.1%), one obtains 73.2% as an estimate of the "before discount" bus mode share. The estimated absolute change in bus mode share would then be $92.1\% - 73.2\% = 18.9\%$ (a relative increase of $18.9/73.2 = 25.8$ percent). Given this analysis, 15% would seem to be the minimum estimate of the absolute increase in bus mode share; perhaps a value approaching 20% would represent an upper estimate. In any case, it seems clear that the increase in bus mode share is more than twice the 7.1% derived from the matched responses alone.

D.3 DERIVATION OF CHANGES IN TRANSIT RIDERSHIP
AND SRTD REVENUE DUE TO 3-MONTH SALE
OF DISCOUNTED MONTHLY PASSES

DERIVATION OF CHANGES IN TRANSIT RIDERSHIP AND SRTD REVENUE

DUE TO 3-MONTH SALE OF DISCOUNTED MONTHLY PASSES

I. SURVEY RESULTS USED

1. Previous Fare Payment Method of December Pass Purchasers:

(Matched responses results from page D-13 (n=277), adjusted for bias that understates number of new riders; also assumes that a third of the new riders would normally replace existing pass users, and are thus counted as former pass users)

Monthly Pass	58%	or	1625 persons
Daily Payers	32%	or	897 persons
New Riders	<u>10%</u>	or	<u>280</u> persons
	100%		2802 passes sold

2. Ratio of Daily Payers to Pass Users on First Survey: 2.135

3. Number of Days Bus Used for Commuting Before Discount and During December According to Fare Payment Method:

	<u>Before</u>	<u>December</u>
December Pass Purchasers; Used Pass Before	4.73	4.76
December Pass Purchasers; Paid Daily Before	4.16	4.57
All Cash Payers Before (1st Survey)	2.26	--
December Pass Purchasers; Non-Users Before	0	4.33

4. Non-work bus trips did not change between before and December, except for former non-users who made an average of 0.194 trips/day, assuming midpoints of categorical responses
5. Average number of non-work trips by former transit users both before and after = 0.241 trips/day

II. CALCULATIONS OF RIDERSHIP CHANGE

December pass purchasers who used a pass before are assumed to represent the number of pass purchasers before, or 1625 persons.

$$\text{Daily Payers Before} = 1625 \times 2.135 = 3469 \text{ persons.}$$

Of the 3469 daily payers before, 897 bought passes in December. The remaining 2572 are assumed to have not changed their tripmaking behavior. If the 897 former daily payers used the bus 4.16 days a week before, the remaining 2572 had to use the bus 1.60 days per week in order to achieve the average of 2.26: $[897 (4.16) + 2572 (1.60)] / 3469 = 2.26$.

Daily Ridership Before:

Pass Users Commuting:

$$1625 \text{ persons} \times 4.73 \text{ days/week} \times 2 \text{ trips/day} / 5 \text{ days} = 3075 \text{ trips}$$

Daily Payers Commuting:

$$3469 \text{ persons} \times 2.26 \text{ days/week} \times 2 \text{ trips/day} / 5 \text{ days} = 3136 \text{ trips}$$

All User Non-Work Trips: 5094 persons x 0.241 trips = 1228 trips
7439

Daily Ridership in December:

Pass Users who used pass before; commuting:

$$1625 \text{ persons} \times 4.76 \text{ days/week} \times 2 \text{ trips/day} / 5 \text{ days} = 3094 \text{ trips}$$

Pass Users who paid daily before; commuting:

$$897 \text{ persons} \times 4.57 \text{ days/week} \times 2 \text{ trips/day} / 5 \text{ days} = 1639 \text{ trips}$$

Daily Payers; commuting:

$$2572 \text{ persons} \times 1.60 \text{ days/week} \times 2 \text{ trips/day} / 5 \text{ days} = 1646 \text{ trips}$$

New Users; commuting:

$$280 \text{ persons} \times 4.33 \text{ days/week} \times 2 \text{ trips/day} / 5 \text{ days} = 485 \text{ trips}$$

Former Pass & Cash Users; non-work trips:

$$5094 \text{ persons} \times 0.241 \text{ trips} = 1228 \text{ trips}$$

New Users; non-work trips: 280 persons x 0.194 trips = 54 trips
8146

$$\text{Increase in Daily Ridership} = \frac{8146 - 7439}{7439} = 9.5\%$$

The increase of 707 daily trips = 1.6% of daily systemwide ridership of 45,000.

III. CALCULATION OF REVENUE CHANGES

It seems reasonable to assume that persons having a daily or monthly pass purchased for commuting would also use the pass for any non-work trips they might make during the time the pass is valid. Therefore, no additional revenue is expected from non-work trips of pass purchasers.

A. Monthly Employee Revenue Before:

Pass Users: 1625 persons x \$12	=	\$19,500
Daily Payers:		
3469 persons x 2.26 days/week x 2 trips/day x 4 weeks/month x		
\$0.35/trip	=	<u>21,952</u>
	Total	\$41,452

B. Monthly Employee Revenues During December:

Pass Users: 1625 persons x \$9	=	\$14,625
Pass Users who paid daily before:		
897 persons x \$9	=	8,073
Daily Payers:		
2572 persons x 1.60 days/week x 2 trips/day x		
4 weeks/month x \$0.35/trip	=	11,523
New Users: 280 persons x \$9	=	<u>2,520</u>
	Total	\$36,741

C. Net Loss in Revenues in December:

\$4,711 revenue loss = 11.4% of previous employee fare revenues of \$41,452

= 1.8% of systemwide monthly fare revenues of \$260,000

Extrapolation to 3-Month Period:

7074 total Discount Passes sold x \$4711 = \$11,894
2802 December Passes

THIRD EMPLOYEE SURVEY (AUGUST-OCTOBER 1979)

Nº 56864

EMPLOYEE SURVEY

ANY INFORMATION PROVIDED WILL BE HELD STRICTLY CONFIDENTIAL

PLEASE FILL IN TODAY'S DATE: _____

1. PRIOR TO SEPTEMBER 1, HOW MANY DAYS PER WEEK DID YOU NORMALLY TRAVEL TO AND FROM WORK BY EACH OF THE FOLLOWING WAYS?

	To work	From work	days per week
Drive alone	—	—	days per week
Drive with others	—	—	days per week
Bus	—	—	days per week
Walk or bicycle	—	—	number of transfers
Other	—	—	days per week
			days per week

2. DO YOU NORMALLY RIDE THE BUS FOR ANY PURPOSE AT LEAST ONCE PER MONTH?

- Yes...Please skip to Question 5
 No....Continue to Question 3

3. WHEN WAS THE LAST TIME YOU RODE THE BUS?

- Before May 1978 May-September 1978 October-December 1978
 January-August 1979 Never rode the bus

4. HAVE YOU EVER USED A MONTHLY PASS? Yes No
 IF SO, WHEN DID YOU USE THE PASS? (Check all which apply)

- Before May 1978 May-September 1978 October-December 1978
 January-August 1979

Now please skip to Question 14 on the back side of the form.

5. We would appreciate some information on the bus trips you took on your last workday. (If today is Sunday or Monday, report Friday's trips)

DID YOU TAKE ANY BUS TRIPS THAT DAY?

- No....Please skip to Question 6
 Yes...Continue below

WHERE DID YOU GO TO ON YOUR FIRST BUS TRIP?

- Home Work Shopping Restaurant Other _____

AT APPROXIMATELY WHAT TIME OF THE DAY DID YOU START THIS TRIP?

- Before 6 AM 6 AM - 9 AM 9 AM - 3 PM 3 PM - 6 PM After 6 PM

HOW MANY TRANSFERS DID YOU MAKE? _____

IN WHAT WAYS DID YOU PAY YOUR FARE?

- Monthly pass Purchased or used daily pass Token Paid cash for a single trip

PLEASE CONTINUE BELOW FOR ADDITIONAL BUS TRIPS YOU MADE YESTERDAY (Including return trips)

DESTINATION	BUS TRIP #2	BUS TRIP #3	BUS TRIP #4
TIME	Home Work Shopping Restaurant Other	Home Work Shopping Restaurant Other	Home Work Shopping Restaurant Other
TRANSFERS	Before 6 AM 6 AM - 9 AM 9 AM - 3 PM 3 PM - 6 PM After 6 PM	Before 6 AM 6 AM - 9 AM 9 AM - 3 PM 3 PM - 6 PM After 6 PM	Before 6 AM 6 AM - 9 AM 9 AM - 3 PM 3 PM - 6 PM After 6 PM
FARE PAYMENT	Number of transfers _____	Number of transfers _____	Number of transfers _____
	Monthly pass Purchased or used daily pass Token Paid cash for a single trip	Monthly pass Purchased or used daily pass Token Paid cash for a single trip	Monthly pass Purchased or used daily pass Token Paid cash for a single trip

6. BESIDES GOING TO AND FROM WORK, HOW MANY BUS TRIPS DO YOU NORMALLY TAKE IN A WEEK? (Note: A trip from one place to another involving a transfer is one trip and going to and from somewhere is two trips.)

_____ trips per week

APPROXIMATELY WHAT NUMBER OF THESE TRIPS REQUIRE THAT YOU TRANSFER FROM ONE BUS TO ANOTHER?

_____ trips per week

7. IN A TYPICAL MONTH PRIOR TO SEPTEMBER (i.e. a month when you took no vacation) IN WHAT WAY(S) DID YOU PAY FOR YOUR BUS FARES? (Note: If you used more than one method, please rank by frequency of use, placing a 1 for most frequently used, a 2 for the second most frequently used, etc.)

Pay cash each time using the bus Buy a daily pass Tokens Monthly pass

8. IF YOU HAVE EVER BOUGHT A MONTHLY BUS PASS, PLEASE INDICATE WHEN AND WHERE YOU BOUGHT THEM. (Please answer for all 4 periods)

BOUGHT PASSES AT:

Work Other Locations

Before May 1978	<input type="checkbox"/>	<input type="checkbox"/>
May-September 1978	<input type="checkbox"/>	<input type="checkbox"/>
October-December 1978 (25% Discount)	<input type="checkbox"/>	<input type="checkbox"/>
January-August 1979	<input type="checkbox"/>	<input type="checkbox"/>

9. IN ALL, HOW MANY MONTHS DID YOU BUY PASSES AT WORK? _____ months

10. IF YOU DON'T USUALLY PURCHASE A MONTHLY PASS, PLEASE INDICATE YOUR REASONS BELOW:

Don't know about the monthly pass Don't know where to buy monthly pass
 Don't ride every day Inconvenient to buy it Afraid of losing it
 Don't want to pay for whole month at once Other (Specify) _____

11. WERE YOU RIDING THE BUS REGULARLY BEFORE MAY 1978? Yes No

IF NOT, WHAT WAS YOUR PRIMARY COMMUTING MODE TO WORK BEFORE THEN?

Auto, drive alone Auto, drive with others Walk or bicycle
 Other (specify) _____

12. THE MONTHLY PASS IS TRANSFERABLE -- THAT IS, OTHERS CAN USE IT. DO OTHER PEOPLE REGULARLY USE YOUR PASS?

Don't buy passes...Please skip to Question 13
 No...Please skip to Question 13
 Yes...Continue below

WHICH OTHER PEOPLE USE IT?

Spouse Child Parent Fellow worker Other _____

ON AVERAGE, HOW MANY BUS TRIPS PER WEEK ARE MADE BY OTHERS WITH YOUR PASS? (Note: going to and from somewhere is two trips)

_____ trips per week

DURING WHAT TIMES ARE THESE TRIPS GENERALLY MADE? (Check as many as apply)

Weekday morning Weekday noon Weekday afternoon Weekday evening Weekend

13. DID YOU BUY AN AUGUST BUS PASS? Yes No

DID YOU OR WILL YOU BUY A SEPTEMBER BUS PASS? Yes No

14. WHEN DID YOU START WORKING AT YOUR CURRENT PLACE OF EMPLOYMENT?

Before April 1978 April-August 1978 September-November 1978
 December 1978-August 1979

15. DO YOU HAVE A VALID DRIVERS LICENSE? Yes No

16. HOW MANY AUTOS ARE OWNED AND OPERATED BY MEMBERS OF YOUR HOUSEHOLD? _____

17. HOW MANY PEOPLE (INCLUDING YOURSELF) LIVE IN YOUR HOUSEHOLD? _____

18. INCLUDING YOURSELF, HOW MANY PEOPLE IN YOUR HOUSEHOLD ARE EMPLOYED OUTSIDE THE HOME AT LEAST PART-TIME? _____

19. WHAT IS THE TOTAL ANNUAL INCOME OF YOUR HOUSEHOLD?

Under \$10,000 \$10,000-\$14,999 \$15,000-\$19,999 \$20,000-\$24,999
 \$25,000-\$29,999 \$30,000-\$39,999 \$40,000-\$49,999 Over \$50,000

20. WHAT IS YOUR BIRTHDATE? (Month/day/year) ____/____/____

21. WHAT IS THE ZIP CODE OF YOUR RESIDENCE? ____-____-____-

22. ARE YOU: MALE FEMALE

This completes the survey. Thank you for your help and cooperation.

THIRD EMPLOYEE SURVEY (AUGUST-OCTOBER 1979)

I. Survey Administration

Total surveys delivered: 22,130 (28 employers)

Total surveys returned: 4,556

Response rate: 20.6%

Response by Type of Firm (n=4,556)

Government (State)	47.6%
Government (Federal)	18.0
Government (Local)	15.6
Public Utility	4.1
Service (Finance)	4.4
Service (Health)	5.2
Other Services	1.0
Manufacturing	1.3
Retail Trade	2.1
Wholesale Trade	0.7

Response by Employer Location (n=4,556)

CBD (17 employers)	52.6%
Fair Transit Service (4 employers)	18.0
Poor Transit Service (7 employers)	29.4

Month Survey Completed (n=4,137)

August	47.1%
September	46.1
October	6.9

II. Demographic Characteristics

Sex (n=4,344)

Male	53.1%
Female	46.9

Age (n=4,064)

Under 30	23.1%
30 - 39	27.1
40 - 49	23.0
50 - 59	21.9
60 and over	4.9

(Demographic Characteristics, Continued)

Annual Household Income (n=4,012)

Under \$10,000	7.1%
\$10,000 - \$14,999	14.1
\$15,000 - \$19,999	12.6
\$20,000 - \$24,999	17.0
\$25,000 - \$29,999	15.9
\$30,000 - \$39,999	19.9
\$40,000 - \$49,999	9.3
\$50,000 and over	3.9

Licensed Drivers (n=4,415)

Licensed	97.1%
Not licensed	2.9

Automobile Ownership (n=4,385)

0 cars	2.2%
1 car	30.4
2 cars	46.2
3 cars	15.6
4 or more cars	5.5
Mean	1.94

Household Size (n=4,389)

1 person	16.5%
2 persons	33.6
3 persons	20.6
4 persons	18.6
5 or more persons	10.8
Mean	2.79

Household Workers (n=4,317)

1 person	41.2%
2 persons	44.8
3 persons	9.4
4 or more persons	4.5
Mean	1.78

Workers and Automobiles (n=4,296)

More workers than automobiles	15.3%
Same number of workers as automobiles	56.9
More automobiles than workers	27.7

(Demographic Characteristics, Continued)

Date Started Working at Current Place of Employment (n=4,346)

Before April 1978	77.3%
April - August 1978	6.4
September - November 1978	3.2
December 1978 - August 1979	13.1

III. Work and Work Trip Characteristics

Number of Work Trips per Week (n=4,515)

Less than ten	4.5%
Ten	94.2
More than ten	1.2

Work Trip Mode Shares (n=4,515)

Drive alone	45.2%
Drive with others	28.8
Bus	19.1
Walk or bicycle	5.3
Other modes	1.6

Number of Work Trips per Week by Bus (n=4,515)

0	76.9%
1 - 2	1.7
3 - 4	1.5
5 - 6	2.6
7 - 8	3.7
9 - 10	13.5
11 - 12	0.1
Mean	1.882

Major Method of Commuting (Eight or More Trips per Week)
(n=4,515)

Drive alone	41.3%
Drive with others	26.1
Bus	17.1
Walk or bicycle	4.4
Other travel mode	1.3
No single travel mode	9.9

(Work and Work Trip Characteristics, Continued)

Commuting Mode Before May 1978 (all respondents; non-transit users who did not buy passes before May 1978 assumed to have used same mode as now) (n=4,316)

Drove alone	45.2%
Drove with others	27.5
Bus	14.6
Walked	4.3
Other travel modes	2.3
More than one travel mode	6.0

IV. General Transit Usage

Use Bus at Least Once per Month (n=4,452)

Yes (users)	27.0%
No (non-users)	73.0

Last Use of Bus (Non-Users Only) (n=3,167)

Never rode bus	36.3%
Before May 1978	37.7
May-September 1978	4.8
October-December 1978	3.8
January-August 1979	17.4

Ever Used Monthly Pass (Non-Users Only) (n=3,114)

Yes	6.6%
No	93.4

Periods When Monthly Pass Was Used (Non-Users Who have Bought Passes) (n=203)

Before May 1978	54.2%
May-September 1978	24.1
October-December 1978	29.1
January-August 1979	30.5

Methods of Fare Payment (Users Only) (n=1,296)

	Major Method	First Method	Second Method	Third Method	Fourth Method	Total Using
Monthly pass	34.7%	35.3%	1.5%	1.1%	0.1%	38.0%
Cash	46.2	47.1	4.6	0.8	0.1	52.6
Daily pass	14.7	15.7	5.1	0.5	---	21.3
Tokens	3.1	3.3	0.8	0.4	0.5	5.0
Multiple response	1.2	---	---	---	---	---
	100.0%					

(General Transit Usage, Continued)

Number of Non-Work Bus Trips per Week (n=4,389)

0	91.2%
1-4	6.6
5-8	0.9
9-12	1.3
13 or more	0.1
Mean	0.328

Number of Trips per Week Made by Others Using Same Transit Pass (n=4,360)

0	98.8%
1	0.4
2	0.4
3 or more	0.4
Mean	0.037

Total Linked Bus Trips Made per Week (work and non-work and other pass users) (n=4,234)

0	77.0%
1-5	5.5
5-9	4.6
10	8.5
11-15	3.0
16 or more	1.4
Mean	1.987

Total Unlinked Bus Trips per Week (each portion of a transfer trip counted) (n=3,612)

0	89.4%
1-5	3.0
6-9	1.6
10	2.9
11-15	1.2
16 or more	1.7
Mean	1.020

Pass Purchasing History (percent reporting buying passes in each time period by location) (n=4,556)

Before May 1978	10.6%
May-September 1978	8.8
October-December 1978	10.8
January-August 1979	13.5
August 1979	9.2
September 1979	10.1

(General Transit Usage, Continued)

Location of Pass Purchases

	<u>Work</u>	<u>Non-Work</u>
Before May 1978 (n=373)	29.5%	71.3%
May-September 1978 (n=354)	41.5	60.5
October-December 1978 (n=446)	79.1	21.5
January-August 1979 (n=554)	72.6	31.0

Use of Pass by Others (Pass Purchasers Only) (n=704)

No	91.3%
Yes	8.7

Other Users of Monthly Pass; Multiple Responses
(Pass Purchasers Only) (n=704)

Spouse	32.8%
Child	57.4
Parent	4.9
Fellow worker	11.5
Other	9.8

Times Other Users Use Monthly Pass; Multiple Responses
(Respondents Reporting Other Users) (n=61)

Weekday morning	31.1%
Weekday noon	16.4
Weekday afternoon	42.6
Weekday evening	23.0
Weekend	47.5

Number of Trips per Week Made by Others Using Passes
(Respondents Reporting Other Users) (n=54)

0	3.7%
1	31.5
2	33.3
3	1.9
4	16.7
5 or more	13.0
Mean	2.704

Reasons for not Buying Monthly Pass; Multiple Responses
(Bus Users Only) (n=890)

Don't know about pass	3.0%
Don't know where to buy pass	3.1
Don't ride every day	69.3
Inconvenient to buy	3.3
Afraid of losing pass	2.0
Dislike paying for whole month at once	8.7
Other reasons	24.8

V. Transit Usage On Previous Workday

Linked Bus Trips Made Yesterday (n = 4,498)

0	76.8%
1	7.1
2	12.9
3	1.3
4	1.9
Mean	0.443

Number of Unlinked Bus Trips Made Yesterday (n=4,191)

0	76.0%
1	6.0
2	13.0
3	1.5
4	2.4
5 or more	1.2
Mean	0.520

Trip Purposes of Trips Made Yesterday (n=1,967)

Home	36.8%
Work	50.0
Shopping	4.3
Restaurant	0.2
Other	4.4
Multi-purpose	4.4

Time of Trips Made Yesterday (n=1,949)

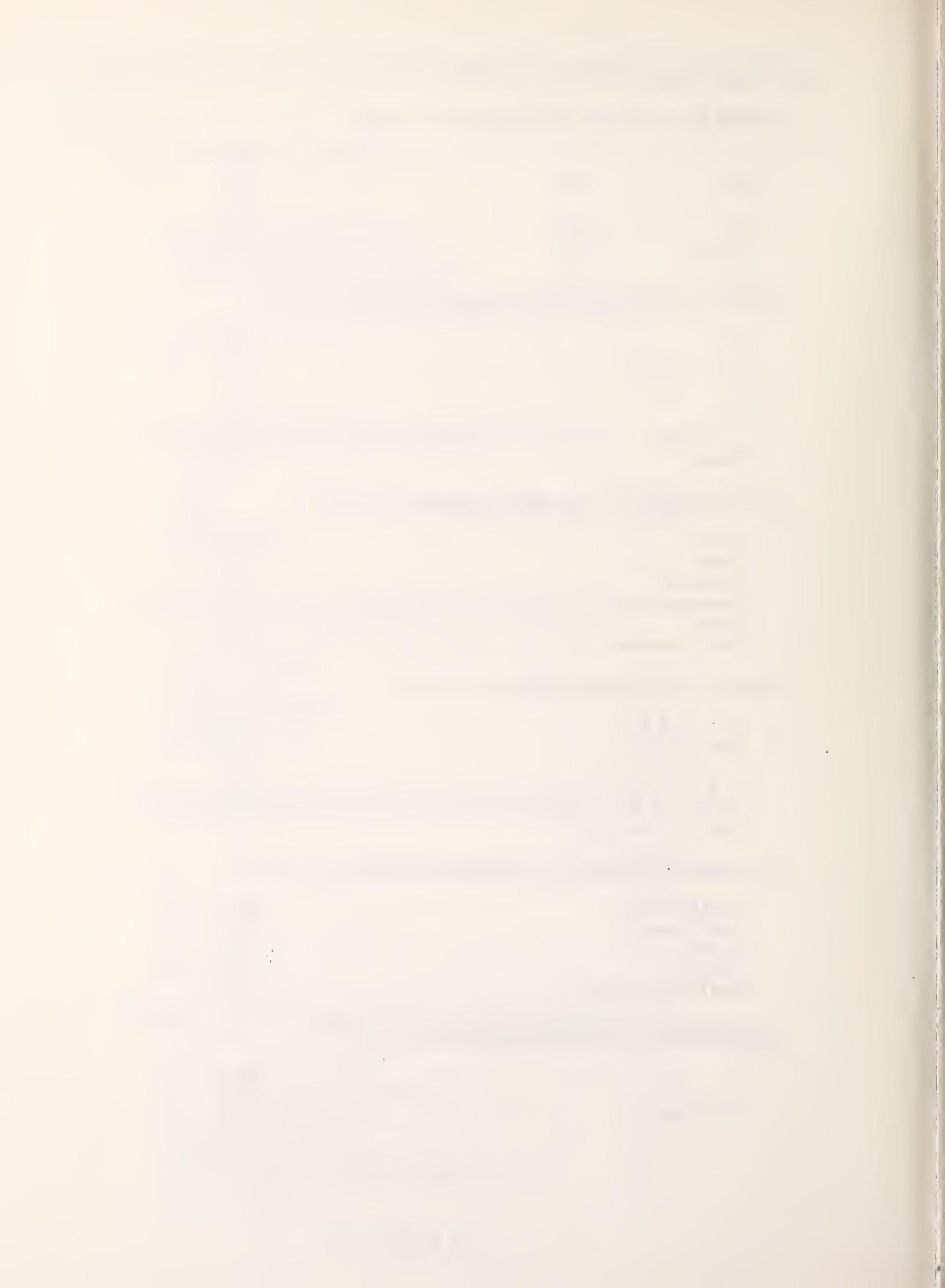
Before 6 A.M.	1.9%
6-9 A.M.	51.1
9 A.M.-3 P.M.	6.7
3-6 P.M.	35.4
After 6 P.M.	2.3
Multiple response	2.6

Fare Payment Method for Trips Made Yesterday (n=1,950)

Monthly pass	45.7%
Daily pass	18.4
Token	3.2
Cash	31.9
Multiple response	0.8

Transfers for Trips Made Yesterday (n=1,833)

0	86.7%
1	8.7
2 or more	4.5



I. BACKGROUND

An employee who considers the use of a private automobile for commuting to work must necessarily take into account the availability of parking sufficiently close to work and the cost of the available parking as a function of both the distance from the work location and the quality of the parking (e.g., covered or uncovered parking stalls, guarded or unguarded lot). The employee who drives to work obviously prefers to have free parking immediately adjoining the work location, and historically the majority of employers in California and other states developing principally in the Automobile Age have provided such parking almost automatically as a necessary element in the package of working conditions and compensation offered to employees.* Recently, however, several new pressures have been forcing new looks at the issue of parking for employees: shakier supply and rising prices of petroleum products; scarcity of and skyrocketing prices of urban-area land; and steadily worsening traffic congestion, with its associated air pollution, in urban areas.

One result of these new pressures is that both employers and employees have had to face up to the cost of employee parking. Employers and employees located in central business districts typically have been the first to feel the economic pinch with regard to parking. As employers began perceiving and calculating the cost of providing parking for employees, some decided to assess employees for a part of the cost of providing parking; other employers opted to not maintain their own parking facilities, but instead to pay some or all of an employee's parking cost in a public or commercial facility; a few employers even decided not to provide parking at all and to leave the employee to solve the parking problem if she or he used a private vehicle for commuting.

Another result of the new pressures causing parking costs to soar has been the development of ideas whose implementation would decrease the use of the single-occupant automobile for commuting and, consequently, the demand for parking spaces. Thus, ways to increase the use of public transit and ridesharing modes for commuting are now being studied intensively. The Sacramento TFP Demonstration was implemented to determine if the sale of monthly transit passes by employers, either with or without a discount with respect to the public offering price, would be a manageable program that increased transit's share of the commuting trips made by their employees. This appendix reports on that part of the evaluation of the demonstration that sought to determine, for purposes of comparison with the cost of a monthly transit pass, the perceived and actual costs to employers of the parking they provide for their employees.

* Apart from expectations of employees, regulations of cities or counties often mandate a minimum number of parking spaces for a facility either on the basis of its type and size (e.g., 1 parking space for each 400 square feet of office space) or on the basis of the number of employees that will be working in the facility at any given time (e.g., one parking space for every 1.2 employees during the largest shift).

II. DATA GATHERING

A. ORGANIZATIONS CONTACTED

The central focus of this parking study was the group of 52 employers who were still participating as of May 1980 in the Sacramento Transit Fare Prepayment Demonstration. Twenty-one employers, or about 40% of the different organizations, were included in the study. However, since the employers not contacted included:

- 1) about a dozen agencies of the State of California known to use the State's parking facilities run by the Department of General Services,
- 2) six employers who maintained no parking for employees and made no provision for employee parking, and
- 3) three employers who had never sold even a single pass over the life of the demonstration,

the employers contacted as part of this parking cost study represented about 80% coverage of the population of interest.

One of the key sources of information concerning the costs of providing off-street parking was the City of Sacramento, the largest downtown supplier of parking and thereby effectively the fee setter for public parking. Data on the costs of operating City-run lots and the fees charged was obtained from the staff of the Parking Division of the City's Traffic Engineering Department. Another key source of parking-cost data was the State of California, the second largest supplier of non-residential parking in downtown Sacramento. The State's Fleet Administration Division of the Department of General Services provided operating cost and fee information, while the office of the State Architect supplied data on construction costs. Exhibit F.1 shows the proportion of downtown non-residential parking (including street parking) supplied by the City of Sacramento and the State of California, as well as by the County of Sacramento and private concerns.

Finally, in order to obtain information on land prices in Sacramento, particularly in the downtown area, one commercial real estate brokerage company and a public agency, the Sacramento Housing and Redevelopment Agency, were visited.

B. PROCEDURE

A number of employers, principally those felt to be important for inclusion in the sample of firms to be studied, were contacted by telephone between May 7-12, 1980 in order to:

- 1) advise them of the parking study recently made an adjunct of the evaluation of the Sacramento Demonstration;
- 2) discuss their initial perception of the cost of providing parking for employees;

EXHIBIT F.1

SUPPLIERS OF NON-RESIDENTIAL
PARKING IN DOWNTOWN SACRAMENTO¹

	<u>Core Area</u> ²	<u>Central City</u> ³
City of Sacramento	51%	55%
State of California	28%	14%
County of Sacramento	4%	2%
Private Businesses	10%	26%
Commercial Operators	7%	3%
	100%	100%

-
1. Source: Report of the Parking Management Program of the Sacramento Central City Study, Sacramento, California, September 1976. On-street parking spaces were included in the supply data.
 2. The core area, containing the CBD, is defined as the area lying between F and Q Streets and between 16th Street and the Sacramento River. This area contains the State Capitol, the Capitol Mall, and many government offices.
 3. The central City includes a larger area than the Core Area, namely the area bounded by Alhambra Boulevard on the east, Broadway on the south, the Southern Pacific Railroad tracks on the north, and the Sacramento River on the west.

- 3) encourage them to seek data -- before the evaluator's visit to Sacramento -- that would permit estimation of the actual cost of providing employee parking; and
- 4) obtain a commitment to grant an appointment during the evaluator's visit to Sacramento May 13-15, 1980.

In the case of one of these employers it was necessary to send a written request briefly explaining the study and describing the information desired.

During the three days May 13-15, six face-to-face discussions and fifteen extensive telephone discussions were conducted in Sacramento. Several of the people contacted, even some of those who were telephoned in advance, said they were extremely busy and preferred a telephone conversation (once they were on the line) to trying to find a suitable meeting time. The telephone discussions generally seemed quite adequate for gathering the type of data required. In addition, the equivalent of half a working day was spent visiting the Parking Division of the City of Sacramento's Traffic Engineering Department, the Sacramento Housing and Redevelopment Agency, and a commercial real estate brokerage company. Another half day was spent in data-gathering telephone conversations with different parties in the State of California's Department of General Services, which operates and maintains the State's parking facilities, and in the State Architect's office, which is responsible for design and construction of state facilities (including parking structures).

In the several days after the site visit to Sacramento, a number of follow-up telephone calls were made to organizations previously contacted. The purpose of these calls was to obtain information promised during the discussions or to clarify the meaning or interpretation of data gathered in Sacramento.

C. RESULTS BY EMPLOYER

The most difficult aspect of the study was to achieve some sense of the "perceived cost" of providing parking for employees in contrast to the "actual cost." For purposes of the study, the perceived cost was taken to be the initial, "top-of-the-head" estimate or general perception of parking's cost as opposed to the perception one would have after assembling data on the cost components. The latter is considered to come under the rubric of "actual or calculated costs."

Exhibit F.2 presents a summary of the findings for each employer contacted. The column headed "Initial Perception" attempts to convey the perceived cost of providing parking for employees. The column headed "Actual or Calculated Costs" generally gives the results of each employer's own search for data and analysis of parking costs. In the case of the City of Sacramento, the evaluator calculated the monthly cost using annual budget and expense data and an estimate of the average number of parking spaces in service over the City's fiscal year.

To ease the task of comprehending the assortment of cost data presented in Exhibit F.2, two additional exhibits have been created. The data on

EXHIBIT F.2

THE COST OF PROVIDING PARKING FOR EMPLOYEES

<u>Name or Type of Employer</u>	<u>Initial Perception</u>	<u>Actual or Calculated Costs</u>
SMUD	All existing spaces came with building when land was bought 30 years ago. Don't have any parking figures broken down. Management not interested in spending time to determine parking costs.	Will soon construct a small lot with 62 stalls on small parcel of land unusable for buildings (land adjoins freeway). Estimated cost of paving and marking only is \$68,000, or \$1097 per space.
CALTRANS	The cost is what the Dept. of General Services charges. No land cost.	About \$21 per month, which is the new General Services rate to take effect on 1/1/81. Contains no land costs.
Hospital A	The hospital's parking spaces are tremendously costly. Having to take down a children's hospital to make room for 200 parking spaces.	Parking space on a structure was estimated to cost \$4,000/space 5 years ago. Perhaps now up to \$5,000 per space if have to build.
City of Sacramento	Since City parking is basically a "cover costs" operation, the cost of a parking space is what the City charges, viz., \$26-\$40 per month for a covered space and \$14-\$26 per month for an open space.	\$35-\$40 per month per space operating costs (includes debt service on land and structures) over a mix of parking structures and open lots.
Wholesaling Firm	Costs only the property taxes on the owned lot.	Land for 9 parking spaces purchased 2 years ago cost \$2,400. Improvements (filling, leveling, surfacing, fencing) cost \$7,980. Total: \$10,380, or \$1153 per space for land and improvements.
Dept. of General Services	Cost set by General Services (determined on a statewide basis). Construction cost per stall in parking structure: \$7,000-\$10,000, or perhaps \$60/month over 30-year life.	Construction cost, including site preparation and landscaping, of parking structure is \$7,000-\$10,000 per stall (State standards) or \$5,700 per stall using UNICOM (patented) method (less conservative design than State's).

EXHIBIT F.2 (Continued)

Name or Type of Employer	Initial Perception	Actual or Calculated Costs
Hospital B	\$7 per month per employee who drives.	\$7/mo./employee paid for parking in lots under freeway run by City on lease from State (employee pays \$3/mo.) Twenty percent rate increase as of 7/1/80.
Hospital C	Cost of parking is a "necessary evil"-- part of the cost of doing business.	\$35,000 every 4 years to resurface and restripe lot, plus cost of sweeping, lighting, and utilities. Opportunity cost of land hard to calculate because of government restrictions on land use.
Fruit Packing Firm	\$65 per month per space	"Information on land value is considered 'company confidential'." Estimated worth to company of each stall is \$100-\$120 per month; fringe benefit value for employees is about \$25/month. It costs \$15,000/year to maintain lots (including sweeping, security, etc.) with 425 spaces.
Bank A	For top officers and the bank messenger, providing a parking space is part of the cost of doing business in a competitive environment. No parking is provided for the other employees	Rental costs: 3 spaces in City lot @ \$36/mo. = \$108 1 space in SYSTEM PARK @ \$40/mo. = 40 Total monthly cost-- \$148
County of Sacramento	Operating costs of lots, not including land cost (some lots are "interim use" only). Current county fee for parking is \$18/month (\$12/month for carpools).	For a lot leased from Southern Pacific (on a multi-year lease) on which 275 spaces are marked, lease cost is \$30,000 per year plus a \$25,000 initial payment.
Bank B	Doesn't have any of its own parking, but pays an employee's parking costs above \$20/month. Bank is <u>not</u> thinking about subsidizing the <u>purchase</u> of bus passes, because even the current parking subsidy is against the bank's general policy.	Since a City lot costing \$36/mo. is used by employees, bank pays \$16/mo. to 24 employees. Total parking cost to the bank is \$384 per month.

EXHIBIT F.2 (Continued)

<u>Name or Type of Employer</u>	<u>Initial Perception</u>	<u>Actual or Calculated Costs</u>
Law Firm	Parking for all the attorneys is included in the lease of the suites. Firm pays 30 non-attorneys \$25/month for transportation to be spent as the employee chooses (can be used toward the rental of a \$30/mo. parking space).	Parking's share of suite rental not known. \$25 transportation-expense grant for 19 non-bus-pass-using employees is \$475/mo.
Bank C	\$40 per month per space	Cost to bank is \$20/month/space because \$20 is paid by the employee. Twenty employees involved, so bank's monthly cost is $20 \times \$20 = \400 .
Retailing Firm	Perhaps a bit more than \$10/month, which is what the firm had been charging their employees	Lost the parking lot the company owned to redevelopment. Employees are now on their own for parking
O.S.H.P.D. (State Agency)	Doesn't concern itself with parking-- that's handled by General Services. Had been getting 2 parking spaces with lease, but now will collect \$25/mo. from the employees using those spaces.	Refer to Dept. of General Services. \$25/month for each of 2 spaces was determined to be parking's share of office rental.
Business Service Firm	The cost of the small 12-space lot adjoining the building is zero because the lot is included in the lease.	No information available
Insurance Company	Didn't have any idea what the real cost of parking is. Including the cost of property, the company probably is subsidizing the auto user.	No information available
Corps of Engineers	G.S.A.-assigned value for a parking space in the Federal Building is \$28/mo.	\$28/mo./space based on G.S.A. view of prevailing market value of similar parking (<u>not</u> calculated on operating costs).
Engineering Firm	Ten spaces come included in cost of lease. An additional 5 spaces are leased at \$27.50/month each.	\$27.50 per month per space.

monthly rental costs of parking space has been extracted from Exhibit F.2 and assembled in Exhibit F.3. In the new exhibit, for those cases where the employer and employee each pay part of the rental cost, the total monthly rental cost of a parking space is given. The case of CALTRANS represents the case of most agencies of the State of California, for CALTRANS is charged--and in turn charges employees using a space--the monthly rate set by the State's Department of General Services for a parking space in a State facility operated by General Services.

In Exhibit F.4, in order to give some comparability to the different non-rental costs, the data from employers shown in Exhibit F.2 has been converted to an equivalent monthly cost per parking space. For purposes of amortizing costs, the interest rate for public bodies capable of obtaining financing through bonds was assumed to be 8% per annum. In contrast, the cost of money to private organizations was assumed to be 12% per year.

Before passing on to the next section, where a synthesis of actual parking costs is presented, it is worthwhile to highlight a few of the results shown in Exhibit F.4. The case of the wholesaling firm is instructive. This firm is located in the southwestern sector of downtown Sacramento, but not in the Core Area or CBD proper. Two years ago it bought a small strip of land adjacent to its facilities for the purposes of adding a 9-space parking lot to its existing stock of parking. Given the firm's somewhat outlying location and the severe limits on the usefulness of the small strip of land for other than something like a parking lot, the firm was able to buy the land for \$2,400. This price works out to about \$1 per square foot, which is considerably below the current price of \$12 to \$18 per square foot in the Core Area or even the \$4 to \$6 per square foot in the lower-priced parts of the central city (including the so-called "midtown" area) or in the urban industrial zones. Thus the equivalent monthly land cost per parking space of \$2.68 shown for this wholesaling firm represents a truly minimum cost (unless the land is considered free, as with the temporary use of state land for parking lots).* Furthermore, this cost does not include a monthly share for property taxes that the firm must pay annually on the land and improvements. Property taxes could add on the order of \$2.30 per month to the operating costs of each space, of which about \$0.60 would be due to the land alone.

Other results worth quickly pointing out in Exhibit F.4 are the following:

- 1) Looking at the figures for SMUD and the wholesaling firm, it appears that the current equivalent monthly cost of paving and marking an essentially level lot is between \$13 and \$14 per space.

* In CBD areas on land purchased for \$15 per square foot, therefore, the equivalent monthly land cost would be about \$40 per parking space in an open lot. What generally happens on land so highly valued is that high-rise structures with one or more lower levels for parking are constructed, thus allowing the cost of land attributable to parking and to other uses to be split in some ratio (often in proportion to the number of floors dedicated to each purpose).

EXHIBIT F.3

MONTHLY RENTAL COSTS OF A PARKING SPACE

<u>Name or Type of Employer</u>	<u>Location</u>	<u>Monthly Cost¹</u>
CALTRANS	Under Freeway and CBD	\$6.00 to \$10.50 until 7/1/80 \$9.00 to \$15.75 from 7/1/80 until 1/1/81 \$12.00 to \$21.00 from 1/1/81
City of Sacramento	Under Freeway and CBD	\$14.00 to \$40.00
Hospital B	Under Freeway	\$10.00 until 7/1/80 \$12.00 from 7/1/80
Bank A	CBD	\$36.00 to \$40.00
County of Sacramento	CBD	\$18.00
Bank B	CBD	\$36.00
Law Firm	CBD	\$30.00
Bank C	CBD	\$40.00
O.S.H.P.D. (State Agency)	CBD	Same as CALTRANS and \$25.00
Corps of Engineers	CBD	\$28.00
Engineering Firm	CBD	\$27.50

¹ For a single-occupant vehicle. Carpoolers pay 75% of rate listed in City of Sacramento facilities and 2/3 of rate listed in County of Sacramento facilities.

EXHIBIT F.4

EQUIVALENT MONTHLY COSTS PER PARKING SPACE FOR VARIOUS TYPES OF COST

<u>Name or Type of Employer</u>	<u>Location</u>	<u>Type of Parking Facility</u>	<u>Type of Cost</u>	<u>Equivalent Monthly Cost Per Space</u>	<u>Conditions Assumed for Amortization</u>
SMUD	Non-CBD	Open Lot 62 Spaces	Paving and Marking	\$13.62	10 Years at 8% Annual Rate
Wholesaling Firm	Non-CBD	Open Lot 9 Spaces	Land Purchase Grading, Paving, Marking, Fencing	\$ 2.68 <u>\$13.08</u> <u>\$15.76</u>	50 Years at 12% Annual Rate 10 Years at 12% Annual Rate
County of Sacramento	Non-CBD	Open Lot 275 Spaces	Land Lease	\$10.99	5 Years at 8% Annual Rate
Hospital A	Non-CBD	Above-ground Structure (Proposed)	Construction \$5,000/Space	\$51.73	30 Years at 12% Annual Rate
Dept. of General Services (State)	CBD or Non-CBD	Above-ground Structure (Proposed)	Construction \$8,000/Space	\$54.50	50 Years at 8% Annual Rate
Dept. of General Services (State)	CBD and Non-CBD	Parking Structures and Lots	Operation and Maintenance	\$21.00 Approximately	None--no land or construction Costs Included
City of Sacramento	CBD and Non-CBD	Parking Structures and Lots	Operation, Maintenance and Debt Retirement	\$35.00-\$40.00	Not Explicit. Various City Bond Issues involved. Typically 20-year or 25-year Bonds.
Hospital C	Non-CBD	Open Lot 750 Spaces	Resealing and Restripping	\$1.28	4 Years at 12% Annual Rate
Fruitpacking Firm	Non-CBD	Open Lots 425 Spaces	Maintenance (Including Security)	\$2.94	None

- 2) The equivalent monthly cost attributable to the construction of a new parking space in an above-ground structure is an excess of \$50 (see the cases of Hospital A and the Department of General Services).
- 3) The operation and maintenance expenses (including administration and policing) for a mixture of parking-structure and open-lot facilities amount to approximately \$21 per space, which is the new monthly rate (set to cover costs) to be charged by the California Department of General Services as of January 1, 1981.
- 4) Over an existing mixture of parking-structure and open-lot facilities, the actual total equivalent monthly cost of providing a parking space in downtown Sacramento is estimated to be between \$35 and \$40.

One additional table has been prepared to show the pattern of parking subsidization and bus pass subsidization as a function of the quality of bus service for almost all the employers participating in the Sacramento demonstration in May 1980. For purposes of the tabulation, parking costs were considered subsidized by the employer if the net monthly cost to the employee was \$20 or less. Exhibit F.5 clearly shows that among the employers located where bus service is fair to poor, all provided employee parking that was either free or subsidized. The sole employer in this group to subsidize employee purchase of bus passes (SMUD, which contributes \$6 of the \$16 pass cost), though located considerably to the east of Sacramento's downtown area, is served by several bus routes and is considered to have bus service just a little below the "good" rating. The left half of Exhibit F.5, which reflects the situation for employers having good bus service (essentially all located in the CBD), shows a different pattern. Several CBD employers do not provide employee parking, thereby leaving their automobile-using employees to rent parking space in City or commercial lots, feed parking meters 25¢ every two hours, or use unmetered street parking available outside the Core Area (the "park and walk" option). The two employers who subsidized the bus pass were among the group of employers who did not provide parking for the general employee. Most CBD employers, however, do have some parking available for employees or make some provision for employee parking; the great majority of these employers effectively subsidize the cost of parking. Except for one State agency that was taking steps to pass on to the users the recently identified monthly cost of two parking spaces (\$25 each) included in its lease of facilities in a private building, only the City of Sacramento provided its employees with parking not considered subsidized. The City, the largest operator of parking in downtown Sacramento, probably understands the true cost of providing parking better than any other employer and charges its employees accordingly.

EXHIBIT F.5

EMPLOYER SUBSIDIZATION OF PARKING AND BUS PASSES AS A FUNCTION OF BUS SERVICE

GOOD BUS SERVICE AVAILABLE

		FAIR TO POOR BUS SERVICE AVAILABLE	
		EMPLOYEE PARKING PROVIDED	EMPLOYEE PARKING NOT PROVIDED
		Parking Cost Subsidized	Parking Cost Not Subsidized
BUS PASS	SUBSIDIZED	<p>1 Private Firm (F) (Top 5 Executives)</p> <p>1 Non-Profit Association</p>	<p>1 Private Firm (Non-executive Employees)</p>
BUS PASS NOT SUBSIDIZED		<p>14 State Agencies</p> <p>1 Federal Agency</p> <p>1 County Govern- ment</p> <p>2 Banks</p> <p>1 Bank (F) (Top 3 Executives and Messenger)</p> <p>1 Private Firm (F)</p> <p>1 Private Firm (Mostly F)</p>	<p>2 State Agencies</p> <p>1 City Government</p> <p>3 Federal Agencies</p> <p>4 Banks</p> <p>1 Private Firm</p> <p>1 Public Utility (F)</p> <p>1 Public Utility (F)</p>
			<p>4 State Agencies</p> <p>1 Federal AFB (F)</p> <p>1 County Government (F)</p> <p>2 Hospitals (F)</p> <p>1 Hospital</p> <p>6 Private Firms (F)</p>
			<p>1 Bus Pass Not Subsidized</p>

Note: Parking costs are considered subsidized if the net monthly cost to the employee is \$20 or less. The presence of (F) after the type of employer indicates that the employee parking is free.

III. SYNTHESIS OF DATA ON ACTUAL PARKING COSTS

A. A STRAIGHTFORWARD APPROACH FOR ESTIMATING THE FULL COST OF PROVIDING PARKING

There appear to be three major categories of economic costs in the provision of parking: land cost, cost of capital improvements, and operating costs.* Each of these categories covers several sub-elements, as shown (but not exhaustively) below.

Land Cost

Property purchase price
Fees and other costs to acquire property
Fees and other costs to obtain use permit for parking
or

Opportunity cost of having to keep a parcel of land for parking

Capital Improvements

Fees and other costs to obtain building or construction permits
Site preparation
Construction of facilities (lots or parking structures)
Marking or striping
Landscaping
Fencing

Operating Costs

Administration cost
Maintenance of buildings and grounds, including cleaning of parking areas and care of landscaping
Security or policing costs
Utilities
Taxes (including property tax) and insurance

A paper by J. L. Donoghue and Richard F. Roti entitled "Financial Feasibility" (see Appendix F Bibliography) provides a helpful tutorial discussion of the elements to be considered in determining the cost of a parking space.

The total equivalent monthly (annual) cost of parking, C_T , can be found by summing the equivalent monthly (annual) cost of land (C_L), cost of capital improvements (C_C), and operating costs (C_O):

* In this analysis no attempt is made to deal with the complex issue of the social costs of providing parking (or of not providing it, for that matter).

$$C_T = C_L + C_C + C_O$$

The values of the C's can be given either as totals for a parking facility (or facilities) or as amounts attributable to a single parking space. The most practical for present purposes is to deal on a "per parking space" basis. This is a relatively simple matter because:

- 1) Land values in downtown Sacramento were generally given in terms of dollars per square foot, which can easily be multiplied by the number of square feet required per parking space;
- 2) Construction costs for parking structures are generally quoted in terms of the cost per parking stall;
- 3) Operating costs for a facility or group of facilities, where not quoted on a per-square-foot basis, can be divided by the number of parking spaces involved in order to find the cost per space.

Exhibit F.6 presents the cost data collected for Sacramento. The summarization is divided into the three component cost categories described above: land cost, cost of capital improvements, and operating costs. For purposes of converting a cost per square foot to a cost per parking stall, a parking stall (including its share of access aisles and turning area) was assumed to require 300 square feet.*

Since the present goal is to estimate the parking cost per stall per month, the land cost and the capital improvement costs, which are expressed as total investment outlays per parking stall, must be converted to equivalent monthly costs. To do so requires the selection of three parameter values for the amortization formula: the time period over which the investment cost is to be spread (amortization period), the compounding period, and the interest (or discount) rate. The examples of parking costs per stall shown in the following section have been based on a 30-year period of amortization at a 12% rate of interest compounded annually. However, since there can be considerable difference of opinion concerning both the appropriate interest rate to use and the length of time over which the investment outlays for a facility (or opportunity cost for a resource held in a particular use) should be amortized, Exhibit F.7 has been prepared to show the equivalent monthly cost per \$1,000 of investment for a wide range of interest rates and amortization periods. Using this table, one can examine the sensitivity of the amortizable parking costs to changes in amortization period and/or interest rate. For example, a \$6,000 investment amortized at 12% annual interest over 30 years would have an equivalent monthly cost of $6 \times \$10.345 = \62.07 ; this same investment amortized over 50 years at 7.5% annual interest would have an equivalent monthly cost of $6 \times \$6.423 = \38.54 .

* The range of values usually considered for the total area required per parking space is 280 to 400 square feet. With the current mix of automobile sizes, an efficient layout of parking stalls that allows for some compact car areas can hold the required area per parking space to 300 to 315 square feet. Since the trend is toward a larger percentage of compact and subcompact cars in the automobile fleet, the lower end of this range, viz., 300 square feet, was chosen as the required area per parking stall.

EXHIBIT F.6

CURRENT COSTS OF FACTORS FOR OFF-STREET PARKING IN SACRAMENTO

Category	Type of Factor	Cost per Square Foot	Cost per Parking Stall ¹	Qualifying Description
LAND	Choicest CBD Land	\$15 - \$18	\$4500-\$5400 ²	Downtown Mall Area
	Other CBO Land	\$12 - \$15	\$3600-\$4500 ²	Downtown, but not Mall Area
	Non-CBO Land	\$ 4 - \$ 6	\$1200-\$1800 ²	Periphery of CBO and Urban Industrial Zones
CAPITAL IMPROVEMENTS	Preparation, Paving, and Marking	\$ 2 - \$ 3	\$ 600-\$ 900	Essentially level surface lot
	Construction of Above Ground Parking Ramp		\$4000-\$5000	Estimate from Hospital A
	Construction of Multi-level Above-Ground Parking Structure		\$6000-\$10,000	Data and estimates from City of Sacramento, State Dept. of General Services, and Office of State Architect
	Construction of Undergound Parking Structure		\$12,000-\$15,000	1978 Garage under Weinstock's cost \$12,000 per stall 1980 estimate by City of Sacramento is \$15,000 per stall
OPERATING	Total Operating Costs, including maintenance on buildings and grounds, utilities, security, & administration	\$0.60/YR	\$15.00/MO	Cost estimated in 1980 by State of California on a State garage in Los Angeles
	Groundskeeping only		\$15-\$21/MO	Cost estimated for 1980-1981 by State of California Dept. of General Services
	Administration only		\$2.22/MO	CALTRANS data, Febr. 1980
	Policing costs only (State police charge)		\$1.53/MO	CALTRANS data, Febr. 1980
	Maintenance and cleaning, incl. care of landscaping	5.9¢/YR	\$1.48/MO	CALTRANS data, Febr. 1980
		3.75¢/MO	\$11.25/MO	Hospital A data, May 1980

¹For conversions from cost per square foot to cost per parking stall, three hundred square feet is figured per parking stall. The range of values usually considered for a parking space is 280 to 400 square feet.

²Except for the case of a single-level facility (e.g., an open parking lot), these figures should be divided by the number of levels (floors) in the structure to give a prorated value for the land cost attributable to a parking stall in the structure.

EXHIBIT F.7

EQUIVALENT MONTHLY COSTPER \$1,000 OF INVESTMENT FOR VARIOUS INTERESTRATES AND AMORTIZATION PERIODS

(Monthly Cost = Annual Cost/12)

Rate of Simple Annual Interest	Amortization Period	5 Years	10 Years	20 Years	30 Years	50 Years	100 Years
0	\$16.667	\$ 8.333	\$ 4.167	\$ 2.778	\$ 1.667	\$ 0.833	
4.5	18.983	10.532	6.406	5.116	4.217	3.797	
6.0	19.783	11.322	7.265	6.054	5.287	5.015	
7.5	20.597	12.140	8.174	7.056	6.423	6.255	
9.0	21.424	12.985	9.129	8.111	7.602	7.501	
10.5	22.265	13.855	10.124	9.211	8.810	8.750	
12.0	23.117	14.749	11.157	10.345	10.035	10.000	
13.5	23.983	15.666	12.221	11.508	11.270	11.250	
15.0	24.860	16.604	13.313	12.692	12.512	12.500	
16.5	25.748	17.564	14.430	13.892	13.757	13.750	
18.0	26.648	18.543	15.568	15.105	15.004	15.000	

Note: Equivalent monthly costs per \$1,000 of investment are shown to tenths of a cent (i.e., to mills).

B. ESTIMATES OF TOTAL PARKING COST FOR TYPICAL FACILITIES

For the existing stock of off-street parking lots and parking structures in the central city area of Sacramento, \$40 appears to be the best round-number estimate of the monthly cost of providing a parking space. This estimate is based on the data gathered in Sacramento, and particularly in the light of the following considerations.

1) For the latest two fiscal years, the City of Sacramento's costs per parking space, averaged over the 6500 to 8200 spaces in service in its facilities over the two years, were calculated to be \$39.83 per month (FY 1978-79, actual expenditures) and \$35.48 (FY 1979-80, budgeted expenditures). These figures include the debt service on land and structures in addition to normal maintenance and other operating costs.* They clearly indicate that the cost to the City of Sacramento, the largest supplier of off-street parking in downtown Sacramento, is nearing \$40 per space per month.

2) While the City of Sacramento is exempt from property taxes that a private owner of a parking facility would have to pay--which could add from \$2 to \$27 per month per space depending on the assessed value of the land and improvements--a private operator would generally be expected to incur lower operating costs (less administration, less maintenance, less utilities) than the City. The fact that a parking space in most privately- or commercially-operated facilities rents for between \$25-\$40 per month suggests that indeed property-tax payments are compensated for by lower operating costs in other areas. It is probably true that most of the existing private and commercial parking operations have not factored into their prices the current opportunity cost of the land on which the facilities lie; otherwise there would be no monthly rental rates in the CBD under \$40 per parking space.

3) The State of California's Department of General Services has estimated the monthly operating cost of its parking facilities to be approaching \$21 per space. This is the new rate that will be charged State employees starting January 1, 1981. As of July 1, 1980, the monthly charge per space has been \$15.75, up from \$10.50 previously. The State's price increases for monthly parking were chosen to move the State's parking facilities toward break-even operation. However, the State does not attribute a land cost to its parking facilities, particularly since most of its open lots are on State-owned parcels destined for future development and assigned only temporarily to parking. Neither are construction costs included. If an average cost per parking space for land and improvements of \$2000, amortized over 30 years at 12% annual interest, were added to the operating cost, this would add another \$21 and raise the total cost of providing a parking space to just over \$40 per month.

It is sobering enough to know that keeping the existing stock of off-street parking in the central city area of Sacramento costs about \$40 per month. What is truly startling, however, is the full cost of providing a

* The cost per space calculated for FY 1979-80 is lower than that for the previous year because the City operated an average of 1000 more spaces in FY 1979-80 than in FY 1978-79. However, one should note that the \$35.48 cost per space in FY 1979-80 is based on budgeted expenditures, not actual expenditures as for FY 1978-79.

parking space in a new facility for which land, capital improvements, and operating costs must all be valued at current prices. Exhibit F.8 presents some estimates of the equivalent monthly costs per parking space in new facilities. The striking thing to note is that the mid-range total cost for a parking space in essentially any kind of new parking structure is greater than \$100 no matter what the land cost. This is because the mid-range construction cost for an above-ground parking structure (\$8,000/stall) works out to an equivalent monthly cost of \$83 when amortized over 30 years at 12% annual interest. For an underground garage, the total equivalent monthly cost of a new parking space approaches \$200. Only an open lot outside the CBD can still offer a parking space for less than \$50 total cost per month, although even in the CBD an open lot can provide a parking space at considerably less than \$100. Note that as either the land value or the construction costs per stall go up, the effect of property taxes becomes greater. For example, in Exhibit F.8, property taxes add an estimated \$4 a month to the cost of the least expensive facility and \$30 a month to the cost of the most expensive facility represented in the exhibit. In the case of any new parking structure that is not tax-exempt, property taxes alone would add to the monthly operating costs an amount similar to or greater than the \$16 cost of a monthly transit pass.

EXHIBIT F.8

ESTIMATED EQUIVALENT MONTHLY COSTS PER PARKING SPACE IN NEW FACILITIES!

Type of Parking Facility	MONTHLY FACTOR COSTS PER PARKING SPACE			TOTAL MONTHLY COST		
	Capital Improvements	Operating Costs ²	Capital Improvements + Operating Costs	Land Costs	Range	
Open Lot in Non-prime Area of CBD, Not Tax-exempt	\$ 8 - \$ 14	\$11 - \$22	\$ 19 - \$ 36	\$37 - \$47	\$ 56 - \$ 83	\$ 70
Open Lot in Non-prime Area of CBD, Tax-exempt	\$ 8 - \$ 14	\$ 3 - \$12	\$ 11 - \$ 26	\$37 - \$47	\$ 48 - \$ 73	\$ 60
Open Lot on Periphery of CBD, Not Tax-exempt	\$ 8 - \$ 14	\$ 7 - \$17	\$ 15 - \$ 31	\$12 - \$19	\$ 27 - \$ 50	\$ 38
Open Lot on Periphery of CBD, Tax-exempt	\$ 8 - \$ 14	\$ 3 - \$12	\$ 11 - \$ 26	\$12 - \$19	\$ 23 - \$ 45	\$ 34
5-story Above-ground Structure in Prime CBD Area, Not Tax-exempt	\$ 62 - \$104	\$29 - \$44	\$ 91 - \$148	\$ 9 - \$11	\$100 - \$159	\$130
5-story Above-ground Structure in Prime CBD Area, Tax-exempt	\$ 62 - \$104	\$15 - \$21	\$ 77 - \$125	\$ 9 - \$11	\$ 86 - \$136	\$111
5-story Above-ground Structure on Periphery of CBD, Not Tax-exempt	\$ 62 - \$104	\$28 - \$43	\$ 90 - \$147	\$ 2 - \$ 4	\$ 92 - \$151	\$122
5-story Above-ground Structure on Periphery of CBD, Tax-exempt	\$ 62 - \$104	\$15 - \$21	\$ 77 - \$125	\$ 2 - \$ 4	\$ 79 - \$129	\$104
2-story Underground Garage in Building of 8 Levels Total, in Prime Area of CBD, Not Tax-exempt	\$124 - \$155	\$41 - \$54	\$165 - \$209	\$ 6 - \$ 7	\$171 - \$216	\$194
2-story Underground Garage in Building of 8 Levels Total, in Prime Area of CBD, Tax-exempt	\$124 - \$155	\$15 - \$21	\$139 - \$176	\$ 6 - \$ 7	\$145 - \$183	\$164

- With the exception of capital improvements to open lots (e.g., grading, paving, and marking), which are amortized over 10 years, all capital improvements and land costs have been amortized over 30 years at 12% annual interest. Equivalent monthly costs were calculated by dividing equivalent annual costs by 12.
- For facilities not tax-exempt, i.e., those on which property tax based on the assessed value of land and improvements (assessed value assumed to be 25% of cost) must be paid, a rate of \$10 per \$100 of assessed valuation was used in calculating the addition to operating costs.

IV. CONCLUSIONS

One of the principal motivations for this study of the perceived and actual costs of providing employee parking was to document the presumed high cost of providing parking as a means of motivating employers to subsidize transit passes for their employees. The economic benefit to the employer would come from the accompanying decrease in the demand for parking for employees.

While a rather limited positive response to the notion of subsidizing bus passes for employees was received from employers, one concrete case of a subsidization plan stimulated by high parking costs was uncovered. Mercy General Hospital, which had already realized how expensive parking space is, at the time of this study was considering the full subsidization of bus passes for employees. Subsequent follow-up by telephone revealed that the Board of Directors of the hospital approved a 100% subsidization plan that began with the distribution of June (1980) passes. In order to receive the free transit pass, an employee must sign a statement pledging to use transit for commuting. Whereas prior to the new subsidization plan, only about six employees per month had been buying passes at Mercy General Hospital through the "Monthly PASSport" program, twenty-three employees availed themselves of the free passes in the first month of operation of the 100% subsidy.*

Despite the high equivalent monthly cost of providing a parking space - shown in the previous section to be from two to more than five times the cost of a monthly pass - at least two regulatory factors currently tend to inhibit an employer from offering employees a transit pass instead of a parking space:

- 1) Local ordinances or regulations often require a minimum number of parking spaces per facility; the minimum number of parking spaces is generally calculated using a formula based on employment at the facility or square footage of the facility.**
- 2) The Internal Revenue Service has said that it will consider the amount of the employer subsidy on a transit pass as income taxable to the employee.

* A part of the nearly fourfold increase in passes distributed at Mercy General Hospital may have been due to employees who switched from pass purchase at public outlets to take advantage of the offer of a free pass. Another share of the increase may have been due to employees who were already using transit to some extent, but not purchasing monthly passes. Nonetheless, based on the experience with the \$3.00 discount offered during the Sacramento demonstration, one expects that some employees who previously did not use transit were induced to become regular bus commuters by their employer's full (\$16) subsidy of the monthly pass.

** For example, the Sacramento Housing and Redevelopment Agency (SHRA) requires on-site parking for each parcel it sells for redevelopment. A ratio of one parking stall per 400 square feet of office space has been used for several years. Two recent office-building project maintained this ratio, but one new office-building projects was permitted to provide one parking stall per 800 square feet of office space. For retail installations, one stall per 250 square feet is often used.

There are some movements afoot, however, to relax or remove these and other regulations so as to put employer policies and benefits promoting collective commuting and use of public transit on a more equal footing with those fostering use of the driver-only automobile. With respect to the first item above, the City of Sunnyvale, California provides a recent case (April 1980) where, under the assault of growing rush hour congestion, an attempt is being made to shift more commuters to collective modes of transport. In addition to reducing the maximum number of employees per acre routinely permitted (i.e., without the need to apply for a variance), the maximum allowable number of automobile parking spaces at new industrial installations has been reduced in order to force any company establishing new facilities to promote carpooling, vanpooling, transit commuting, and bicycling* at those facilities. Concerning the second inhibiting factor cited above, legislation is being proposed in Congress to exempt from taxation to the employee any amount contributed by the employer toward the purchase of public transit passes or tickets.**

When one considers the likely inflation in the elements of cost, it is clear that over time each parking space maintained will represent an increasing equivalent monthly cost. Even if the cost of a monthly transit pass were to increase at the same rate as the cost of maintaining a parking space, the current lower cost of a monthly pass means that the absolute difference between the costs of the pass and the parking space will grow. For example, taking \$40 as the monthly cost of a typical parking space and \$16 as the cost of the monthly transit pass, the parking space is \$24 more expensive than the pass. If both the parking space and the pass experience 50% price increases, the parking space will be \$36 (\$60-\$24) more expensive than the pass. Note that the difference between the costs of the parking space and the pass also increased by 50%, from \$24 to \$36. Thus, unless the price of a bus pass rises at a faster rate than the cost of providing a parking space, the absolute cost disadvantage of the parking space relative to the transit pass is likely to grow ever larger as a result of any inflation. Even those employers who recognize this, however, may face competitive pressures that force them to provide some employee parking whose cost to the employee is far less than the cost to the employer.

* To encourage commuting by bicycle, new installations must provide a certain number of secure bicycle storage areas and showers.

** In 1979 Congress passed a law requiring the federal government to exact reimbursement from federal employees for the fair market value of parking in government building parking facilities. It would appear that, to be consistent, the Federal Government, no longer permitted to provide employee parking as a free fringe benefit, would not be permitted to subsidize the purchase of transit passes. Congress will also have to clarify policy in this regard.

APPENDIX F: BIBLIOGRAPHY

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